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कृषि-विपणन लिंकेज : भारत में मूल्यांकन और संकल्पनात्मक ढांचा प्रतिपादित करने की रूपरेखा

AGRICULTURE-MARKET LINKAGES: EVALUATING AND EVOLVING A CONCEPTUAL FRAMEWORK IN INDIAN CONTEXT

प्रो. एल के वासवानी
डॉ. वी वेंकटकृष्णन
श्री. रवीन्द्र उपाध्याय
श्री. जयेश तलाटी
PROF. L. K. VASWANI
DR. V. VENKATAKRISHNAN
MR. RAVINDRA UPADHYAY
MR. JAYESH TALATI

आर्थिक विश्लेषण और अनुसंधान विभाग
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लेखक

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डॉ. वी वेंकटकृष्णन
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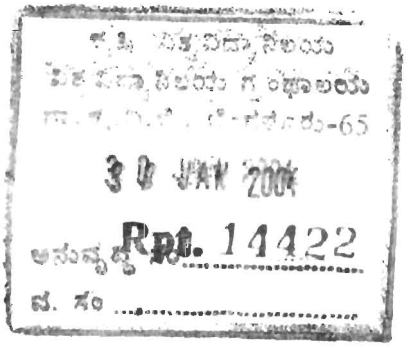
श्री. जयेश तलाटी

Author

Professor L.K. Vaswani
Dr. V. Venkatakrishnan
Mr. Ravindra Upadhyay
Mr. Jayesh Talati

Institute of Rural Management
Post Box No. 60
Anand 388 001
Gujarat



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आभार

इस अध्ययन को पूरा करने में हम उन सभी फर्मों और संगठनों के प्रबंध-तंत्र और अधिकारियों के बहुत आभारी हैं जिन्होंने अध्ययन को पूरा करने के लिए आवश्यक सूचना, आंकड़े और परिचलनात्मक ब्यौरे उपलब्ध कराने में सहायता प्रदान की. हम विशेष रूप से केरल फलोद्यान विकास कार्यक्रम, अरविंद मिल्स लिमिटेड, वलसाड जिला फल और सब्जी सहकारी फेडरेशन लिमिटेड और हिन्दुस्तान लीवर लिमिटेड एवं उनके सहयोगी संगठनों के आभारी हैं जिनके आवश्यक जानकारी उपलब्ध कराने से ही यह अध्ययन और प्रकाशन कार्य सम्पन्न हो सका है. हम उन संगठनों, उद्योग से जुड़े व्यक्तियों, व्यापार और कृषकों के भी आभारी हैं जिनका ज्ञान और अनुभव इस अध्ययन में हमारे लिए बहुत उपयोगी रहा.

हम नाबार्ड के भी आभारी हैं जिनसे इस अध्ययन के दौरान इरमा स्थित चेयर यूनिट को आवश्यक सहयोग प्राप्त हुआ. हम नाबार्ड के मुख्य महाप्रबंधक, श्री के वी राघवुलू एवं महाप्रबंधक, श्री टी एन झा के विशेष आभारी हैं जिन्होंने इस सामयिक पत्र को तैयार करने के लिए प्रोत्साहित किया. फील्ड अध्ययन को पूरा करने और इस प्रकाशन को तैयार करने में इरमा द्वारा प्रदान की गई सहायता सराहनीय रही.

इस प्रकाशन को तैयार करने में सुश्री सुषमा थंकाचन और इसके संपादन में डॉ. अर्चना बुरड़े द्वारा प्रदान किए गए सहयोग के लिए हम उनका आभार व्यक्त करते हैं.

लेखक

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Authors

कार्यपालक संक्षेप

कृषि का वाणिज्यिकीकरण / औद्योगिकीकरण की ओर अग्रसर होना विकास की एक स्वाभाविक प्रक्रिया है. यद्यपि किसी देश की विकास की गति को कई बाहरी कारण जैसे - कृषि नीति की रूपरेखा, विपणन की कमियां, अधिकांश जन-संख्या का समग्र जीवन स्तर, आदि प्रभावित करते हैं, फिर भी कृषि के ऐसे अग्रसर होने से कई लाभ और हानियां स्वयं ही निर्मित होती हैं. इसलिए नीति-निर्माताओं के लिए यह आवश्यक है कि वे ऐसे सहयोग की योजना बनाएं जिससे कृषि के ऐसे अग्रसर होने पर पड़ने वाला प्रतिकूल प्रभाव न केवल कम हो बल्कि सभी स्टेक-होल्डर्स को किसी एक परिस्थिति में अधिकाधिक लाभ भी मिल सके. इस अध्ययन के माध्यम से कुछ ऐसे विद्यमान मॉडलों के मूल्यांकन और कृषि उद्योग / मार्केट लिंकेज के लिए संकल्पनात्मक रूपरेखा तैयार करने का प्रयास किया गया है जिससे भारतीय कृषि का सही दिशा में आगे बढ़ना सुगम हो सके.

2. इस अध्ययन में केस मैथोडोलॉजी का उपयोग किया गया है. इस मैथोडोलॉजी से प्रत्येक मामले में कृषि उद्योग लिंकेज की समस्याओं को स्पष्ट रूप से समझने और संगत वेरियेबल को पहचानने तथा उनके परस्पर संबंध को जानने में सहायता मिली. इस अध्ययन में सम्मिलित और बताए गए मामलों में निम्नलिखित शामिल हैं :-

- फलोद्यान उत्पाद का विपणन,
- वलसाड जिला फल और सब्जी सहकारी फेडरेशन लिमिटेड, गनदेवी
- हिन्दुस्तान लीवर लिमिटेड के विशेष संदर्भ में खेडा (गुजरात) में चिकोरी की ठेका खेती
- अरविंद मिल्स लिमिटेड, अहमदाबाद द्वारा कपास का प्रोक्योरमेंट,
- केरल फलोद्यान विकास कार्यक्रम द्वारा फलोद्यान उत्पाद का उत्पादन और विपणन.

3. इस अध्ययन का उद्देश्य कृषि उद्योग के इंटीग्रेशन के वर्तमान स्वरूप का विश्लेषण कर एक ऐसी आम रूपरेखा सुझाना था जोकि भारतीय संदर्भ में कृषकों, ट्रेड, कृषि उद्योग और उपभोक्ताओं के लिए संगत और रेस्पोन्सिव हो सके. इसीलिए जैसे-जैसे इस अध्ययन में प्रगति होती गई, वैसे-वैसे इसका क्षेत्र व्यापक किया जाता रहा ताकि अध्ययन के प्रारंभ में कृषि उद्योग लिंकेज की तुलना में जिस कृषि विपणन लिंकेज का प्रस्ताव किया गया था उसके अनुरूप भारतीय कृषि उत्पादन बाजार की वास्तविकताओं पर आधारित एक समग्र स्वरूप प्रतिपादित हो सके.

4. उक्त चारों में से प्रत्येक मामले की अपनी-अपनी खूबियां रहीं जिनके कारण उत्पादन ट्रेडिंग / प्रोसेस प्रणाली के बीच विद्यमान बैकवर्ड लिंकेज स्थापित करने में मदद मिली. इसकी विशेषताओं में सहकारी संस्थाओं द्वारा अपने अपने सदस्यों को अधिकतम लाभ प्रदान करना, चिकोरी का कॉफी के संयोजन से भी भिन्न वैकल्पिक उपयोग करने की कमी, टेक्सटाइल मिलों द्वारा कपास के प्रोक्योरमेंट कार्य को गिन्नींग और प्रोसेसिंग इकाइयों

को आऊट-सोर्स पर देना शामिल थी ताकि मूल्य जोखिम कम हो और उत्पादन का इंटीग्रेशन हो सके और साथ ही केरल फलोद्यान विकास कार्यक्रम में अनौपचारिक संस्थागत व्यवस्था के जरिए फलोद्यान का विपणन भी हो सके.

5. सफल सहकारी संस्थाओं के मामले में सहकारी संस्थाओं और सदस्यों के बीच पारस्परिक संबंध जिन तीन प्रमुख कारकों के इर्दगिर्द घूमते हैं, वे हैं : सेवाओं की व्यवस्था के जरिए मजबूत बैकवर्ड इन्टिग्रेशन, संयुक्त विपणन के लाभ और विपणन लेनदेन. पारदर्शी प्रक्रिया के प्रति सदस्यों का विश्वास बनाए रखने के लिए सहकारी संस्थाओं को दो महत्वपूर्ण कदम उठाने होते हैं. इसमें से प्रथम कदम सेवाओं की क्वालिटी में सुधार जारी रखना जैसा कि अधिकांश सदस्य चाहते हैं और दूसरा बाजार की जरूरत के अनुसार "उत्पादन प्रणाली" को सुव्यवस्थित रखने के लिए "संगठनात्मक तत्व" का सहारा लेकर एक ऐसी अर्थव्यवस्था का निर्माण करना जो कृषकों की सौदेबाजी की क्षमता को सुधार सके. इसी तरह के बाजार फ्रंट पर सहकारी संस्थाओं को सहकारी बाजार का मुकाबला करने के लिए अधिक प्रयास करने पड़ते हैं जो कि प्रोफेशनल प्रबंधकीय इनपुट को अपग्रेड करके और उत्पादों के वैल्यू एडिशन से किया जा सकता है.

6. सहकारी संस्थाओं की तरह निजी फर्में चिकोरी कन्ट्रैक्ट से आगे बढकर कन्ट्रैक्ट कृषकों के साथ व्यापक आधार के रिश्ते बनाने का प्रयास नहीं करतीं. इस तथ्य का पता उन कृषकों द्वारा दिए गए कारणों से चलता है जिन्होंने चिकोरी के कन्ट्रैक्ट फार्मिंग को जारी नहीं रखा. इससे पता चला कि 38% ने इसलिए कन्ट्रैक्ट छोड़ा कि हिन्दुस्तान लीवर लिमिटेड ने उन्हें कम कीमतें ऑफर की थी. इसके अतिरिक्त चिकोरी पर आधारित फसल प्रणाली का आर्थिक स्वरूप कमजोर (23.8%) था तथा ऐसी संस्थाओं का अभाव देखने में आया जो सहकारी संस्थाओं का विकल्प सिद्ध हो सकती थीं. तथापि जो कृषक इस समय कन्ट्रैक्ट फार्मिंग में लगे हुए हैं उनमें से अधिकांश (70%) फर्म से संतुष्ट हैं. कृषक इस बात से भी अनविज्ञ थे कि हिन्दुस्तान लीवर लिमिटेड का अवसर संबंधी व्यवहार क्या था और अन्य फर्मों का कृषकों के साथ शेयरिंग बाजार रिवार्ड क्या रहा. अंतिम उत्पाद अर्थात कॉफी चिकोरी ब्लेन्ड के साथ चिकोरी की कीमत के बेन्चमार्किंग की बजाए फर्मों ने बेन्चमार्क को कम कीमत पर रखना ठीक समझा तथा इसीलिए कॉफी की कीमतों में वृद्धि के साथ यह अंतर भी बढ़ता चला गया. यह भी पाया गया कि दीर्घावधि कृषि के लिए हिन्दुस्तान लीवर लिमिटेड सहित निजी फर्मों में दीर्घावधि कमिटमेंट का अभाव था जैसा कि कन्ट्रैक्ट कृषकों के मामले में चिकोरी की कम उत्पादकता और लाभप्रदता से स्पष्ट हैं. फर्म ने काफी देर से प्रोक्यूरमेंट और प्रोसेसिंग को स्थानीय फर्म को आउटसोर्सिंग पर दिया था तथा आंशिक रूप से इसके कन्ट्रैक्ट फार्मिंग परिचालनों को गुजरात से बाहर भी ले जाया गया जिससे चिकोरी के उत्पादक किसानों में असुरक्षा की भावना पैदा हुई.

7. अरविंद मिल्स लिमिटेड, अहमदाबाद की प्रोक्यूरमेंट व्यवस्था के अध्ययन से बहुत सी जटिल समस्याएं देखने में आई जो ग्लोबल उद्योग के वातावरण से जुड़े हुए कारणों

सहित कार्य स्थल से ही संबंधित हैं. इस अध्ययन से यह पता चलता है कि उद्योग के आपूर्तिकर्ता के रूप में कृषक की कितनी दयनीय स्थिति है. कमज़ोर, बैकवर्ड-लिंकेज के कारण ही उद्योग की यह हालत है. भारतीय टेक्सटाइल उद्योग ग्लोबल की दृष्टि से प्रतियोगी है, लेकिन उसे कीमत और क्वालिटी दोनों ही दृष्टि से कपास से कच्चे माल में इस प्रकार के प्रतियोगी लाभ उपलब्ध नहीं हैं और इसके वर्तमान वातावरण के कारण इसका बैकवर्ड लिंकेज कमजोर है. यह पाया गया कि अरविंद मिल्स लिमिटेड कच्चे माल के रूप में अपने कपास को गिन्नर-कम-ट्रेडर, जीयूजेसीओटी, सीसीआई और अन्य ब्रोकर, कमीशन एजेंटों से बड़ी मात्रा में प्राप्त कर रहा था. इसका बड़ा भाग ऐसे जी एण्ड पी इकाइयों से प्राप्त होता था जिनके पास तकनीकी रूप से उच्च कोटि की प्राथमिक प्रोसेसिंग सुविधाएं उपलब्ध थीं. क्वालिटी कंट्रोल को बनाये रखने के लिए अरविंद मिल्स लिमिटेड चयनित आधार पर जी एण्ड पी इकाइयों से सीधा संबंध बनाये रखता है. कपास के उत्पादन, उसके हैण्डलिंग तथा गिन्निंग और प्रेसिंग में अच्छी प्रथाओं के बारे में जागरूकता पैदा करने के लिए अरविंद मिल्स लिमिटेड ने जी एण्ड पी इकाइयों को विडियो फिल्में वितरित कीं. अनुकूल बाजार में प्रोक्योरमेंट का अधिक लाभ अर्जित करने के लालच में अपने विकल्प खुला रखने की व्यवस्था के बावजूद इसकी कीमतें अधिक रहीं. इस रणनीति से अरविंद मिल्स लिमिटेड को देसी तथा ग्लोबल बाज़ार में अपने कच्चे माल की कम्पीटीटिव कीमत कम रखने में मदद मिलेगी.

8. कपास के लिए ऊपर बताए गए कच्चे माल के प्रोक्यूरमेंट के दृष्टिकोण से कपड़ा उद्योग को मूल्य और क्वालिटी का लाभ प्राप्त हो सकता है लेकिन इससे खेती के स्तर पर उत्पादकता की पूरी उपेक्षा भी होने की आशंका है. अतः इसमें कोई आश्चर्य नहीं यदि सूती कपड़ा निर्यात संवर्धन परिषद (टेक्सप्रोसिल) की रिपोर्ट में चेतावनी दी गई है कि भारत में सूती वस्त्र बनाने वालों का देशी कपास के उत्पादन में तेजी से लागत संबंधी लाभ समाप्त होता जा रहा है. इसके अतिरिक्त वर्ष 2002-03 में देश में कपास का जो उत्पादन था वह दशक में सबसे कम रहा जिससे पता चलता है कि उत्पादकता और मूल्य के चालू स्तर पर कपास के उत्पादन की आर्थिक समर्थता कम हो गई है, यहां तक कि कपास संबंधी प्रौद्योगिकी मिशन में भी उत्पादकता के सुधार पर समुचित जोर नहीं दिया गया है.

9. केरल फलोद्यान विकास कार्यक्रम को एक ऐसा विशिष्ट कार्यक्रम पाया गया जिसका कार्यान्वयन अभिनव सार्वजनिक सहयोग और संस्थागत/संगठनात्मक तंत्र के संयुक्त मेल से हुआ है. इस कार्यक्रम की सफलता का पता इसी से चलता है कि पिछले 8 वर्षों में 1886 स्वयं सहायता समूहों के माध्यम से इसने 41,000 कृषकों को लाभान्वित किया है और फलों और सब्जियों की उत्पादकता की दृष्टि से इसकी निष्पादकता में 50 प्रतिशत से भी अधिक का सुधार हुआ है. कुछ इन्टरवेंशन जैसे मास्टर कृषकों द्वारा स्वयं सहायता समूहों का प्रबंधन, सार्वजनिक क्षेत्र के बैंकों का कन्सोर्टियम के जरिए ऋण प्रदान करना, सहभागी प्रौद्योगिकी विकास और कार्यालय विहीन प्रसार प्रणाली आदि से लघु कृषकों द्वारा सामूहिक कार्रवाई के लिए दीर्घावधि मॉडल को तैयार करने में सहायता मिली. इन सहयोगी साधनों का कार्यान्वयन, आधार स्तर पर स्वयं सहायता समूह जैसी अनौपचारिक संस्थाओं और औपचारिक लेकिन कृषकों द्वारा प्रबंधित "कृषक बाजार" जैसी संस्थाओं (चेरिटेबल समिति

अधिनियम के अन्तर्गत पंजीकृत) के माध्यम से किया गया था. जिस शिखर संगठन ने केरल फलोद्यान विकास कार्यक्रम से कारोबार लिया था उसे सब्जी और फल संवर्धन परिषद, केरल के नाम से कंपनी अधिनियम 1956 की धारा 25 के अंतर्गत पंजीकृत किया गया. कृषकों द्वारा व्यवस्थित प्रोसेसिंग इकाई के लिए "कृषक-फैक्टरी लिंकेज" संवर्धन के लिए केरल फलोद्यान विकास परिषद के प्रयास उतने सफल नहीं हो सके जितने सफल इसके "कृषक-बाजार" मॉडल रहे. गहन विश्लेषण से पता चला कि इसके कार्य पर्यावरण के दो प्रमुख कारकों की आयोजना स्तर पर उपेक्षा की गई. अर्थात इसके कमांड क्षेत्र में अनन्नास (क्वी) उपयुक्त प्रोसेसिंग किस्म का अभाव पाया गया और उसके क्षेत्र में जिस टेबल किस्म (मारिसस) का अधिक उत्पादन हो रहा था उसकी कीमतें अत्यधिक थीं. अतः इन कठिनाइयों को दूर करने के लिए जिस कमांड क्षेत्र विकास दृष्टिकोण से प्रयास हुए उसके परिणाम अब आने लगे हैं भले ही वे धीरे-धीरे मिल रहे हैं.

10. इस पेपर के अंतर्गत जिन केस अध्ययनों को शामिल किया गया है उनके संरचनात्मक आयाम एक दूसरे के दृष्टिकोण से बहुत भिन्न हैं. इसलिए इन अध्ययनों की एक दूसरे से तुलना युक्तिसंगत नहीं होगी. तथापि निष्कर्षों से मोटे तौर पर यह जानकारी मिलती है कि बैकवर्ड लिंकेज स्थापित करने के लिए कृषकों द्वारा व्यवस्थित संगठन ही अधिक "कृषक / उत्पादक" उन्मुख हैं. कृषकों को अपने उत्पाद के विपणन के अतिरिक्त जिन सहायक सेवाओं की जरूरत होती है उन्हें भी ये संगठन उपलब्ध कराते हैं. दूसरी ओर निजी फर्में अधिक प्रोक्यूरमेंट उन्मुख रहती हैं और कृषकों के साथ उनका संबंध प्रोक्यूरमेंट से अधिक आगे नहीं जाता. ये फर्में मुश्किल से ही इन्पुट और प्रसार सेवाएं उपलब्ध कराती हैं. कपास के मामले में इस क्षेत्र के भीतर ही विभिन्न स्तर स्वतंत्र रूप से कार्यरत हैं और कृषकों तथा प्रोसेसर्स के बीच शायद ही कोई लिंक है. इससे कृषकों और फर्मों के हित एक दूसरे के विपरीत दिखाई पड़ते हैं जिन्हें उपयुक्त संस्थागत और नियमित मैकेनिज्म के जरिए लगभग अच्छे बनाए रखने की जरूरत है.

11. इस पेपर के दूसरे भाग में सामान्य कृषि बाजार लिंकेज के खाके को तैयार करने का प्रयास किया गया है, जिसकी चारदीवारी के भीतर विभिन्न विकल्पों को स्पष्ट करते हुए उन्हें अपनाने का रास्ता सुझाया गया है. भारतीय कृषि के भावी विकास में इस स्वरूप की महत्वपूर्ण भूमिका को देखते हुए इस क्षेत्र में अनुसंधान और ज्ञान के विकास से भी मार्गदर्शन प्रदान करने में सहायता मिलेगी. यह महसूस किया गया कि भारतीय कृषि के संबंध में विद्यमान व्यवस्थाओं के अंतर्गत ही कृषि बाजार लिंकेज के सामान्य खाके के विकास के लिए प्रयास करने होंगे, जो भारतीय कृषि के पुनःपरिभाषित चिंता क्षेत्र हैं. इस पुनर्परिभाषा के अनुसार 21 वीं शताब्दी में भारतीय कृषि की चिंता के प्रमुख क्षेत्र उत्पादकता और विविधीकरण होंगे. अन्य क्षेत्रों में उदारीकरण, भूमंडलीकरण, दीर्घकालिक उपभोक्ता प्राथमिकताएं और खाद्य सुरक्षा (जिसे पोषण और क्षेत्रीय खाद्य सुरक्षा के रूप में पुनः परिभाषित किया गया है) भावी कार्य वातावरण के अंग होंगे. तदनुसार राज्य को अपनी नीतिगत रूपरेखा और सार्वजनिक सहयोग का अभिविन्यास इस प्रकार करना होगा जिससे

इस क्षेत्र में दक्षता वृद्धि, कृषि में निजी निवेश तथा कृषि प्रोसेसिंग कार्यकलापों का विस्तार हो सके. यह भी महत्वपूर्ण है कि भारतीय कृषि को ऐसे समाधान प्रतिपादित करने होंगे जो उसके स्वयं के संदर्भ में ठीक बैठते हों और उनसे कृषि में निवेश बढ़ सकें. लेख है कि जी डी पी में कृषि का सबसे कम स्तर 24 प्रतिशत जो एक दशक पहले था वही सबसे कम स्तर पुनः आ गया है.

12. परिचालन स्तर पर देश की कठिनाइयों को दूर करने की जरूरत है. इन्हीं कठिनाइयों के कारण भारतीय कृषि मुख्यतः आपूर्ति प्रणाली पर आधारित है और धीरे-धीरे इसमें परिवर्तन करके इसे बाजार उन्मुख बनाने की जरूरत है. आदर्श स्थिति वह होगी जिसमें चालू आपूर्ति उन्मुख उत्पादन प्रणाली धीरे-धीरे मांग उन्मुख होती जाए और उसमें कृषि उत्पाद की मात्रा और क्वालिटी दोनों होंगे. इसका अर्थ होगा कि बाजार सूचना के प्रसार, कृषि उत्पाद बाजार में प्रतियोगिता और पारदर्शिता का संवर्धन तथा कृषि प्रोसेसिंग तक उनके लिंकेज जैसे सहायक साधनों के जरिए भारतीय कृषि को बाजार उन्मुख करना होगा. इस तर्क का समर्थन करते हुए इसके कार्यान्वयन के बारे में विशेष रूप से कृषि जैसी अत्यधिक अनिश्चित उत्पादन प्रणाली के संदर्भ में, इसकी व्यावहारिकता पर प्रश्न भी खड़े हो सकते हैं. ऐसी परिस्थितियों में सबसे अच्छा संभव प्रयास मांग और आपूर्ति के बीच कुशलतापूर्वक संतुलन बनाने की जरूरत होगी. इसके अतिरिक्त भारतीय कृषि की विचित्र विशेषताओं और जरूरतों के साथ तालमेल बैठाकर संतुलन के दृष्टिकोण को रखना होगा. साथ ही एग्रीबिजिनेस फर्मों को कृषि उत्पादन प्रणाली की तीन महत्वपूर्ण उप प्रणाली अर्थात अनुसंधान और विकास, प्रसार तथा बाजार के बीच अधिकतम सामंजस्य स्थापित करना होगा. इसके अतिरिक्त प्रोसेस, उद्यमों और संस्थाओं के पुनर्गठन की जरूरत भी होगी जिसमें संवर्धन में लगे कार्मिकों का क्षमता निर्माण भी शामिल है. तथापि विशेष रूप से भारतीय परिप्रेक्ष्य में रोजगार सृजन और खाद्य सुरक्षा की कीमत पर बाजार उन्मुख कृषि उत्पादन का संवर्धन नहीं किया जाना चाहिए.

13. वैश्वीकरण के बढ़ रहे वातावरण और भारत में धीरे-धीरे उदारीकरण के विस्तार से भारतीय कृषि में ऊपर से समन्वित करने की प्रक्रिया में बदलाव आ रहा है. इसके कारण उत्पादन, प्रोसेसिंग और विपणन के विभिन्न कार्य एक दूसरे पर निर्भर होते जा रहे हैं और आने वाले समय में कृषक भी अधिक खाद्य उत्पादन प्रणाली के भागीदार बन सकेंगे. पूर्व और विद्यमान कदमों की समीक्षा से पता चलता है कि ऊपर से समन्वय तीन धाराओं में बढ़ता रहा है जो धाराएं हैं : ठेका कृषि की छत्रछाया में उत्पादक और कृषि उद्योग के बीच वस्तु का आगमन और स्थल विशिष्ट लिंकेज प्रौद्योगिकी विस्तार को इन्टिग्रेट करते हुए सप्लाई चेन मॉडलों का प्रतिपादन तथा ठेका कृषि के विशेष संदर्भ में इन तंत्रों का संवर्धन और विनियंत्रण. इन वर्गों के अंतर्गत जो विशिष्ट कदम शामिल हैं वे हैं :- आनन्द के पैटर्न पर सहकारी समितियाँ, लघु कृषक एग्रिबिजिनेस कन्सोर्टियम के जरिए सार्वजनिक इन्टरवेंशन, कन्ट्रैक्ट फार्मिंग का पैप्सी मॉडल तथा सप्लाई चेन मैनेजमैंट के रूप में निजी क्षेत्र की पहल. सप्लाई चेन मैनेजमेंट में कुछ विशिष्ट कदमो में इनपुट और आउटपुट का

कार्य करने वाली फर्मों के साथ टाटा रैलिस जैसी फर्म का कार्यनीतिपरक एलाएन्स भी शामिल है. इसके अतिरिक्त, केरल फलोद्यान विकास कार्यक्रम एक ऐसा विशेष कार्यक्रम पाया गया जिसमें विभिन्न स्तरों पर उतपादकों द्वारा संचालित औपचारिक और अनौपचारिक संस्थागत मैकनिज़म कार्यरत थे. मध्य प्रदेश खादी ग्रामोद्योग बोर्ड और हिन्दुस्तान लीवर लिमिटेड के बीच संयुक्त उद्यम निजी-सार्वजनिक क्षेत्र की साझेदारी के नए युग का संकेत है. यह उद्यम खाद्य उत्पादों के लिए "विंध्य वैली" का विकास करेगा जिसके अंतर्गत हिन्दुस्तान लीवर लिमिटेड का कार्य यह होगा कि वह बोर्ड द्वारा उत्पादित वस्तुओं का देश में विपणन करे. इन कदमों के अंतर्गत अब तक शामिल की गई अथवा ऐसे कार्यक्रमों के अंतर्गत शामिल की जानेवाली वस्तुओं में ककड़ी, आलू, मसाले, मूंगफली, पॅशन फ्रूट, नींबू जाति के फल, सिल्क इत्यादि शामिल हैं जिनका मुख्यतः निर्यात किया जाता है. ऐसा लगता है कि जिन मामलों में अंतिम उत्पाद का बाजार अधिक विशिष्ट कच्चे माल / उत्पाद पर आधारित है वहां ऐसे कृषि बाजार लिंकेज प्रारंभ में अधिक संगत और उत्पादक सिद्ध होंगे और धीरे-धीरे ये कई अन्य फसलों और संबद्ध क्षेत्रों के उत्पादों तक पहुँच जाएंगे.

14. केस अध्ययनों से प्राप्त गहरी जानकारी, देश में ऊपरी समन्वय के लिए उठाए गए पूर्व और वर्तमान कदमों तथा भारत जैसी स्थितियों में किए गए अनुभवजन्य अनुसंधानों ने कृषि-बाज़ार लिंकेज के लिए अधिक अपेक्षित आम ढांचा तैयार कर लिया है. इसमें भारतीय कृषि की आधार स्तरीय वास्तविकताओं, कृषि उत्पादन बाज़ारों के ढांचे और उपभोग पद्धति को भी ध्यान में रखा गया था. विशिष्टतया, इन विशेषताओं में अल्प भू-धारिता और फार्म स्तर पर फसल उत्पादन की गुणवत्ता में कमी, कृषि उत्पादन बाज़ार व्यापार की प्रमुखता और घरों में अपेक्षाकृत भोजन का अपरिवर्तशील पैटर्न शामिल हैं. इसे देखते हुए, बाद में किए गए तीन महत्वपूर्ण चयनों में सफलता मिली जो प्रभावी कृषि बाज़ार लिंकेज स्थापित करने के लिए महत्वपूर्ण हैं. इन प्रक्रियाओं को, (i) प्रभावी बैकवर्ड लिंकेज तैयार करने, (ii) बाज़ार और विपणन संस्थाओं का संचालन और कार्य करने; और (iii) मूल्यवर्धन के माध्यम से मांग सृजित करने के रूप में वर्णित किया गया है. उद्योग / बाज़ार के साथ कृषि की पारस्परिक निर्भरता में सुधार का कोई भी प्रयास इन प्रकियाओं की सफलता और असफलता पर निर्भर करेगा. इस परिप्रेक्ष्य में उन बाह्य बातों का समुचित ध्यान रखा जाएगा जिनसे ये प्रक्रियाएं प्रभावित होती हैं.

15. लागत और क्वालिटी की दृष्टि से कृषि के साथ उद्योग के कुशल इंटीग्रेशन को ग्लोबल प्रतियोगी उत्पादन प्रणाली का नेतृत्व करना होगा. इस विश्लेषण में बैकवर्ड इंटीग्रेशन के प्रोसेस से जुड़े कुछ महत्वपूर्ण प्रश्नों के उत्तर ढूंढ़ने का हमने प्रयास किया है. ये प्रश्न इस प्रकार हैं : (i) उत्पादकों पर ऊपरी समन्वय का प्रभाव, (ii) पूरी तरह समन्वित क्षेत्र बनाम कम समन्वित क्षेत्र से कृषकों को प्राप्त प्रतिफल की तुलना; और (iii) उत्पादन से जुड़ी ऊपरी प्रणाली का नियंत्रण. अपवाद के तौर पर यदि सहकारी संस्थाओं और कृषकों द्वारा प्रबंधित अनौपचारिक संगठनों को छोड़ दें तो ऊपरी समन्वय का प्रभाव सीमित दिखाई पड़ेगा. उत्पादकों द्वारा अनुभूत समस्याओं में मूल्य निर्धारण में फर्मों का अवसर संबंधी व्यवहार,

बड़े कृषकों के लिए प्रिफरेन्स, ठेकाकृत क्षेत्र के कृषकों के संपूर्ण उत्पाद को स्वीकार करने से मना करना, ठेका कृषि की उत्पादकता और दीर्घकालिता बनाए रखने के लिए दीर्घावधि कमिटमेंट का अभाव आदि शामिल हैं. दूसरी ओर जब कीमतें अधिक रहती हैं तब कृषक भी अपने उत्पाद स्थायी बाज़ार में बेचते हैं. यद्यपि इन समस्याओं का पूरी तरह निदान संभव नहीं है, लेकिन कुछ अर्द्धवैधानिक व्यवस्था आवश्यक है जिसमें किसान और फर्म दोनों के हितों की सुरक्षा का प्रावधान हो. फर्मों द्वारा ठेके के अनुपालन से संबंधित समस्याएं, अवसर संबंधी व्यवहार और बाजार शक्ति के उपयोग की संभावनाएं ऐसे पर्याप्त कारण हैं जिनके लिए एसएचजी या कॉमन इन्टरेस्ट के समूहों या किसी अन्य प्रकार के कृषक संगठन जैसे औपचारिक या अनौपचारिक आधार-स्तरीय संस्थागत तंत्र के रूप में कृषकों को अपने आप को संगठित करना चाहिए. ऐसी संयुक्त कार्रवाई से भी बड़ी मात्रा में विद्यमान अर्थव्यवस्था को आगे बढ़ाने में इन आधार-स्तरीय संस्थाओं को लाभ होगा.

16. ऊपर से समन्वित तंत्र भी इस बात के लिए प्रयासरत है कि सप्लाई चेन उन्मुख प्रोक्यूरमेंट मॉडलों से लाभ प्राप्त किए जा सकें. लोजिस्टिक, प्रोडक्ट फ्लो और सूचना की जानकारी को सुधारने के लिए एक सप्लाई चेन में अपनाई जाने वाली कार्य-नीति एलाएन्स, नेटवर्क और अन्य नियंत्रक ढांचों से खाद्य चेन की विभिन्न अवस्थाओं की पारस्परिक निर्भरता में वृद्धि होती है. इस संबंध में नाबार्ड/ आईसीआईसीआई जैसी ऋणदात्री संस्थाओं तथा हिन्दुस्तान लीवर लिमिटेड/फुड वर्ल्ड जैसी विपणन संस्थाओं के साथ टाटा रैलीस जैसे कदम फार्म इनपुट को बढ़ाकर उसे मज़बूत करके किसानों को अधिक लाभ प्रदान करने में सहायक होंगे. वस्तुतः टाटा रैलीस और यहाँ तक महेन्द्रा शुभलाभ सर्विसेस जैसे साधारण मॉडल कृषकों को ऐसे इनपुट, ऋण, प्रसार और विपणन उपलब्ध कराएंगे जिनसे कृषि उद्यमों का ऑफ-फार्म उत्पादन सुधर सकेगा. इसी प्रकार आईटीसी ई-चौपल सप्लाई चेन में बहुत अधिक महसूस की जा रही प्रभावोत्पादकता को शामिल किया जाएगा और इससे किसानों को अपने बाजार रियलाइज़ेशन को बढ़ाने में मदद मिलेगी. इरमा द्वारा ई-चौपल पर किए गए शीघ्र मूल्यांकन से पता चलता है कि किसानों को सोयाबीन की अच्छी कीमत, कम लेनदेन लागत तथा विपणन परिचालनों की पारदर्शिता का लाभ हुआ है.

17. ऐसा नहीं लगता है कि समय के साथ परीक्षित सहकारी संस्थाओं के ऊपरी समन्वय तंत्र ने समस्या के हल के लिए कोई रास्ता निकला हो. अपवाद के रूप में कुछ ऐसे संगठन हो सकते हैं, जिन्हें पूर्व में स्थापित किया गया था. उनके समन्वित प्रयास की सफलता का प्रमुख कारण उनके अपने सदस्यों के साथ अच्छे संबंध थे और उनका आपस में विश्वास बना हुआ था. यह स्थिति कई वर्षों के प्रभावी विपणन समर्थन, सेवा सहयोग और एक्सचेंज प्रक्रिया की पारदर्शिता से हो पाया था. पूर्व में सफलता की कुंजी रहे इन महत्वपूर्ण तत्वों को संभवतः वर्तमान पीढ़ी का नेतृत्व संभावनाशील सहकारी संस्थाओं में परिवर्तित नहीं कर पाया. अतः आज के कार्य वातावरण से जुड़ी समस्याओं के समुचित निदान के लिए इन कृषक अनुकूल संस्थाओं के विकास के प्रयास जारी रहने चाहिए. वस्तुतः एक संगठनात्मक ढांचे के जरिए केएचडीपी ने ऊपरी समन्वय के निर्माण के लिए एक वैकल्पिक मॉडल निर्मित

किया है, जिसका प्रबंधन किसानों द्वारा किया जाता है. इस मॉडल को देश के विभिन्न फसल क्षेत्रों और रीजन्स में अपनाया जा सकता है.

18. जहाँ तक बाज़ार और विपणन संस्थाओं के "कंडक्ट" का संबंध है, दो मसलों को अपेक्षाकृत अधिक महत्वपूर्ण पाया गया है, जिसमें से पहला, स्पॉट-बनाम-ऊपर से समन्वित बाजार की सापेक्ष सुदृढ़ता, और दूसरा, किसानों से उपभोक्ता तक कृषि उत्पाद को पहुँचाने में लगी विपणन संस्थाओं का "कंडक्ट" है. जहाँ तक पहले मसले का संबंध है, यह पाया गया कि बाज़ार प्रणाली की उपेक्षा से मूल्य विसंगतियाँ, विशेष रूप से स्थायी/क्षेत्रीय स्तर पर पैदा हो सकती हैं. मूल्य दक्षता को सुनिश्चित करने के लिए मूल्य प्रतियोगिता में आधारभूत मसले का मतलब है बड़ी संख्या में खरीददारों और विक्रेताओं की उपस्थिति. कुछ विद्वान इस तर्क में साक्ष्य संबंधी कमी पाते हैं कि कृषि का औद्योगिकीकरण न तो आवश्यक है और न उसका आंतरिक स्वरूप ही स्वतंत्र उत्पादकों और खुली तथा विकेन्द्रीकृत बाजार प्रणाली पर आधारित व्यवस्था से ही अधिक दक्ष हैं. इससे भिन्न विचार रखने वालों का तर्क है कि एकाधिकार और प्रतिबंधात्मक प्रथाओं की दृष्टि से हमारी आंतरिक नियंत्रण विपणन प्रणाली को पूरी तरह बदलने की जरूरत है, क्योंकि वर्तमान में इससे कृषि उत्पादन में स्वतंत्र और प्रतिस्पर्धात्मक ट्रेड में बाधा होती है.

19. विपणन नेटवर्क को सुदृढ़ करने की दृष्टि से तथा मूल्यों को प्रतियोगी आधार पर निर्धारित करने और बाज़ारों को मैनुपुलेट होने से बचाने के लिए सरकार को अपनी नीतियों और विनियमों की जाँच करने की जरूरत है. दूसरा, कंट्रैक्ट और स्पॉट मार्केटों के सह-अस्तित्व को बनाए रखा जाए और एक की कीमत पर दूसरा नहीं बढ़ाया जाना चाहिए. तीसरा, विपणन संस्थाओं के कंडक्ट के मसले को आंशिक रूप से विनयमों द्वारा और आंशिक रूप से उन संस्थाओं और संगठनों को संवर्धित और सहायता करके सुलझाया जा सकता है, जो किसानों के हितों की रक्षा के लिए कार्य कर रहे हैं. आगे, कृषि में निवेश करने के प्रयोजन से उत्पादकों को अपनी क्षमता सुधारने के लिए उच्च मूल्य को नियंत्रित करना एक चुनौती भरा कार्य है.

20. कृषि विपणन लिंकेज के प्रभावी निर्माण के लिए तीसरा महत्वपूर्ण प्रोसेस मूल्यवर्धन के जरिए मांग निर्मित करने की प्रक्रिया है. इस प्रक्रिया से बहुत अधिक अवसरों की संभावनाएं हैं, जैसाकि हाल ही में "फिक्की" ने आंका है, जिसने पाया है कि भारत में वस्तुतः इसकी उपेक्षा हुई है, जहाँ खाद्य उत्पादन में मूल्यवर्धन केवल 7% है, जबकि चीन में यह 23%, फिलिपाईंस में 45% या युनाईटेड किंग्डम में 188% है. दूसरी ओर सर्वेक्षणों से यह भी ज्ञात हुआ है कि भारत में मूल्यवर्धित उत्पादकों के संवर्धन में जो मूल्य बाधा है, वह नए उत्पादों की मांग को निर्मित करने की है, जबकि सच्चाई यह है कि भारतीय खाने के टेस्ट में कोई परिवर्तन नहीं हुआ है. इसलिए कृषि उत्पाद के मूल्यक्रम में वृद्धि धीरे-धीरे होगी और उसको सावधानी से दिशा प्रदान करनी होगी. देश में दोहरी आय वाले न्यूक्लियर परिवारों के 250 मिलियन मज़बूत मध्यवर्गीय लोग, जिनकी उच्च डिस्पोसबल आय है, खाद्य बाजार के भविष्य को निर्धारित करने की धुरी हैं.

21. कृषि में मूल्यवर्धन के अवसर, कृषि के कच्चे माल और/या विपणन के जरिए, दोनों ही स्तरों पर उपलब्ध हैं. विपणन मार्ग मूलतः सुस्थापित विपणन पद्धतियों पर आधारित होगा, जो अन्य उत्पादों के मामले में भी लागू है, बशर्ते कि उत्पाद अच्छे टेस्ट की आधारभूत जरूरतों को पूरा करता हो, उसमें विविधता (खरीदने, तैयार करने और खाने में आसान) हो और वह कम दाम में खरीदा जा सकता हो. हाल ही में, खाद्य न्यूट्रिशन और सुरक्षा महत्वपूर्ण उपभोक्ता चिंता बन गए हैं. ये विपणन प्रथाएं इस प्रकार अपनाई जाएं, ताकि ब्रांडिंग के प्रयोजन से वस्तुओं की पैकेजिंग, प्राथमिक प्रोसेसिंग और अत्यधिक डिफरेन्सिएटेड उत्पाद के मैनुफैक्चरिंग सहित सभी प्रकार के मूल्यवर्धन उसमें आ सकें. इस संबंध में उन फर्मों से आवश्यक शिक्षा ग्रहण की जा सकती है, जो अभिनव उत्पादों और विपणन प्रथाओं के जरिए मूल्यवर्धन स्पेस में उपभोक्ता की अनआर्टिकुलेटेड मांग तक का लाभ उठा रहे हैं, उसे निर्मित करने और बाजार को पुनः परिभाषित करने के प्रयास कर रहे हैं. तथापि, मूल्यवर्धन की प्रभावोत्पादकता को इस प्रक्रिया का अभिन्न अंग बन जाना चाहिए जैसाकि मांग निर्मित करने की इसकी क्षमता से आंका जाता है. इसके अतिरिक्त जब मूल्य निर्माण प्रोसेस का आधार बाजार की संभावनाओं के बजाय उपभोक्ता की संभावना हो, तो मांग निर्मित करने के प्रयोजन से मूल्यवर्धन दूरगामी प्रभाव डाल सकता है.

22. डिफेरेन्शिएटेड रॉ मटीरियल (उदाहरणार्थ, न्यूट्रिशनल वैल्यू या केमिकल कंपोज़िशन) के उत्पादन के जरिए वैल्यू एडीशन के अन्य आयाम रेशेदार खाद्य की उत्पादकता और उत्पादन में वृद्धि और खाद्य सुरक्षा की चिंता में कमी के साथ ही महत्वपूर्ण हो जाएंगे. विविधीकरण की प्रक्रिया की तो बहुत अधिक संभावनाएं हैं, बशर्ते कि इसके पारंपरिक आधार के अतिरिक्त यह उद्योगों के व्यापक सैट के लिए कच्चे माल को भी तैयार करे, जिससे अधिकाधिक पर्यावरण अनुकूल, बायो-डीग्रेडेबल उत्पादों को तैयार किया जा सके. इसके लिए अनुसंधान और विकास, विशेष रूप से बायो-प्रौद्योगिकी में निवेश की जरूरत होगी, जिससे कृषि के कच्चे माल अर्थात् बायो-फ्यूल के लिए एग्री बॉयोमास, टैक्सटाइल के रूप में जूट आदि में विस्तार की अपार संभावनाएं हैं.

23. कृषि के कच्चे माल के अंतिम उपयोग के आधार पर बाजार संभाग के अवसरों की संभावना का पता लगाया जा सकता है. इस मापदंड का उपयोग करके दो वृद्धि वर्गों में छः विशिष्ट सेगमेंट्स की पहचान की गई है अर्थात् घरेलू, संस्थागत (सेवा के लिए तैयार/खाने के लिए तैयार सेगमेंट), कृषि निर्यात, खाद्य प्रोसेसिंग, औद्योगिक और फीड-फोडर. प्रत्येक सेगमेंट अपने स्वयं अवसर पैदा करता है, जैसाकि स्वास्थ्य और फर्मस्यूटिकल उत्पादों (औद्योगिक सेगमेंट) में हो रहा है. विशिष्ट अंतिम उपयोग बाजारों के विशिष्ट सहयोग से कच्चे माल/उत्पाद की क्षमता को सुधारने के लिए इस दृष्टिकोण से कृषि में विविधीकरण को सहायता मिलेगी.

24. अध्ययन से पता चलता है कि भविष्य में कृषि बाज़ार लिंकेज में बहुत परिवर्तन होने की संभावना है. आम रूपरेखा में चयनित प्रमुख प्रोसेस के नीतिगत लिखतों के

त्वरित मूल्यांकन से नए नीतिगत कदमों और राष्ट्रीय कृषि नीति के विद्यमान प्रावधानों और अन्य संबंधित नीतियों को मज़बूत करने की जरूरत का पता चलता है. व्यापक रूप से मांग को कृषि के प्रति अधिक रेस्पान्सिव बनाने की जरूरत है अर्थात् अधिक बाज़ार उन्मुख स्थिति प्राप्त करने की जरूरत है. ऐसी उन्मुखता के लिए ऐसी नीतियों की जरूरत होगी, जिनसे कृषकों को कम कीमत पर जानकारी, प्रौद्योगिकी और विपणन उपलब्ध हो सके तथा प्रतियोगी बाज़ार कीमतों की क्वालिटी और उन तक कृषकों की पहुंच में सुधार हो. राष्ट्रीय कृषि नीति में विपणन, कृषि प्रोसेसिंग की क्वालिटी, संस्थागत सुधार, अनुकूल आर्थिक वातावरण का प्रावधान विद्यमान तो है, लेकिन उसके कार्यान्वयन की समीक्षा से पता चलता है कि नीतियों को व्यावहारिक धरातल पर उतारने के लिए इन कार्यक्रमों और योजनाओं की दृष्टि से बहुत कम ही कार्य किया जा सका है. तथापि, कृषि विपणन नेटवर्क (AGMARKNET) का उपयोग इसका अपवाद है.

25. परिचालन स्तर पर आम रूपरेखा में दो उप-अभिसंस्करणों का चयन किया गया है, जिनमें प्रभावी बैकवर्ड लिंकेज प्राप्त करने के लिए नीतिपरक समर्थन आवश्यक होगा. अधिक प्रतियोगी और पारदर्शी व्यवस्था से खुली बाज़ार प्रणाली को कृषि वस्तुओं के लिए अपेक्षित कुशलता प्राप्त हो सकेगी. वस्तुओं की क्वालिटी और मूल्य निर्धारित करने की पद्धति में सुधार करने के अतिरिक्त वस्तुओं को बिना किसी नियंत्रण के लाने-ले जाने में आने वाली कठिनाइयों को सरकार दूर करे. वस्तु विपणन प्रणाली की कुशलता सुधारने के लिए कृषक बाज़ार / कृषि भविष्य जैसे नए संस्थागत तंत्र को लंबे समय तक कार्य करना है. कृषकों की स्वयं की और कृषि बिज़नेस फर्मों की बाज़ार शक्ति के संतुलन को बनाए रखने और बाज़ार में उनके कंडक्ट को सुधारने के लिए नीति विषयक समर्थन में स्वयं सहायता समूह और सहकारी संस्थाओं जैसे संस्थागत तंत्र को मज़बूत करने का प्रावधान होना चाहिए. सहकारी संस्थाओं को स्वायत्त रूप से कार्य करने तथा उन्हें स्वावलंबी बनाने और उनके प्रजातांत्रिक तरीके से कार्य करने के लिए हाल ही में राष्ट्रीय नीति में जो परिवर्तन हुए हैं, उन्हें कड़ाई से लागू करने की जरूरत है.

26. ऊपरी समन्वय धीरे-धीरे क्वालिटी कंट्रोल और बाज़ार जोखिम का स्तर प्राप्त करते जा रहे हैं और कपास जैसी वस्तुओं में ऊपरी समन्वय का विकास परिपक्व अवस्था प्राप्त करने जा रहा है. ऐसे अंतिम उपयोग के बाजारों को बहुत ही विशिष्ट कच्चे माल की जरूरत होती है और इससे व्यापक लाभ प्राप्त होंगे. इसी तरह राज्य के विद्यमान एपीएमसी अधिनियम में आवश्यक संशोधन करने और कांट्रैक्ट फार्मिंग तथा सप्लाई चेन मैनेजमेंट के जरिए ऊपरी समन्वय के विकास के लिए नए मॉडल कानून बनाने की जरूरत है.

27. इस अध्ययन में डिफेरेन्शिएटेड कृषि कच्चे माल के विपणन और उत्पादन, दोनों के जरिए कृषि में मूल्य वर्धन के लिए अनुकूल नीतियों पर जोर दिया गया है. कुछ समय से कृषि प्रसंस्करण मार्गों को नीतिपरक समर्थन मिल रहा है, लेकिन इसका परिणाम बहुत उत्साहजनक नहीं रहा है. जहाँ एक ओर इस नीति की असफलता के कारणों को जानने की

जरूरत है, वहीं दूसरी ओर ऐसे अन्य बाजार सेगमेंट में मूल्य वर्धन को भी प्रोत्साहित करना आवश्यक होगा जिनमें भारतीय कृषि के सफल विविधीकरण की संभावना को सुधारने के लिए कच्चे डिफेरेन्शिएटेड कृषि माल का उपयोग किया जा सकता है.

28. इन प्रश्नों का उत्तर प्राप्त करने के लिए ऊपर बताए गए क्षेत्रों में नया अनुसंधान करने की जरूरत है. विविध कार्य वातावरण के अंतर्गत 3 प्रमुख अभिसंस्करणों के अपग्रेडेशन के लिए विशिष्ट विवरण और दस्तावेजीकरण के लिए अन्य अनुसंधान प्राथमिकताएं तय की जा सकती हैं. ऐसे अनुसंधान में चौथे प्रमुख अभिसंस्करण को भी जोड़ने की संभावना पर ध्यान केन्द्रित किया जा सकता है और वस्तुओं तथा खाद्य उत्पादों के थोक और फुटकर विक्रय उप-अभिसंस्करण प्रक्रियाओं को शामिल करने के लिए मार्केट एक्सचेंज पर अनुसंधान किया जा सकता है.

EXECUTIVE SUMMARY

The transition of agriculture towards commercialisation/ industrialisation is natural though number of external factors like agricultural policy framework, extent of market imperfections, overall standards of living of majority population, etc., may influence its pace for a country. However, such a transition creates its own advantages and disadvantages. Therefore, it is necessary for the policy makers to plan interventions that not only minimise the adverse impact of such transition but also attempt to maximise its benefits across all the stakeholders in a given context. The study made an attempt to evaluate some of the existing models and evolve a conceptual framework for agriculture-industry/market linkage, which can facilitate the transition of Indian agriculture in the right direction.

2. The study was conducted using 'Case methodology'. The methodology was helpful in clarifying the nature of problems in agriculture industry linkage in each case and identifying relevant variable and nature of their relationship. The cases covered and reported in this study include: "Marketing of Horticultural Produce" through Valsad District Fruit and Vegetable Cooperative Federation Ltd., Gandevi; "Contract Farming of Chicory" in Kheda, (Gujarat) with particular reference to Hindustan Lever Limited (HLL); "Procurement of Cotton" by Arvind Mills Ltd., Ahmedabad; "Production and Marketing of Horticulture Produce" by Kerala Horticulture Development Programme (KHDP).

3. The objectives of the study were to analyse existing frameworks of agriculture-industry integration and in turn suggest a generic framework, which may prove to be relevant and responsive to the farmer, trade, agro-industry and the consumer in the Indian context. As the study progressed, its scope was enlarged to cover 'agriculture-market linkage' as against 'agriculture-industry linkage' proposed at the beginning of the study to make it holistic in terms of realities as observed in the Indian agro-produce markets.

4. Each of the four cases had unique characteristics, which contributed to the evolution of existing backward linkages between production – trading/processing system. The unique characteristics included cooperatives' tendency to 'maximise benefits' to its membership, lack of alternative use of chicory other than as additive to coffee, outsourcing procurement of cotton by the textile mills to

ginning and pressing units to reduce price risk and integration of production and marketing of horticulture produce through informal institutional arrangements in KHDP.

5. In case of successful cooperatives, the bondage between cooperatives and membership revolved around three major factors, viz., strong backward integration through provision of services, benefits of collective **marketing** and transparency in process of market transaction. In order to retain the trust of their membership cooperatives need to take two important steps – firstly, continue to improve the quality of services needed by majority of the membership and secondly, introduce 'organising element' to further align 'production system' with the needs of the market and generate economies of scale to improve farmers bargaining power. On the marketing front the cooperatives need to put greater effort in improving cooperative–market interface through upgrading professional managerial input and value addition to its products.

6. Unlike cooperatives the private firms do not attempt to build broad based relationship with the contract farmers beyond execution of chicory contract. This was reflected in the reasons narrated by farmers who have discontinued contract farming of chicory, i.e., nearly 38 per cent discontinued as prices offered by HLL were low, poor economic viability of chicory based cropping systems (28.6%), transactional problems (23.8%) and absence of alternative institutions like cooperatives (14.3%). However, majority of farmers (70%) who are currently engaged with the firm are satisfied. The farmers are unaware regarding the opportunistic behaviour of HLL and other firms towards sharing market rewards with the farmers. Instead of benchmarking chicory price with the end product, i.e., coffee chicory blend, the firms keep the benchmark at lower levels and the gap increases with increase in coffee prices. It was also observed that private firms including HLL lacked long-term commitment towards sustainable agriculture as evident from low productivity and profitability of chicory, in case of contract farmers. Lately, the firm has outsourced procurement and processing to local processing firms and has partly moved its contract farming operations outside Gujarat leading to sense of insecurity amongst chicory growing farmers.

7. The study of procurement operation facilitate by Arvind Mills Limited (AML), Ahmedabad brought out very complex set of factors which are at work including factors associated with global industry

environment. The study brings out the plight of the farmer as a supplier to the industry. The weak backward linkages are due to current task environment of the industry – globally competitive textile industry in India without similar competitive advantage, both in terms of cost and quality, in cotton as raw material. The AML was observed to source its Cotton as raw material from ginner-cum-traders, GUJCOT, CCI and other broker/commission agents with largest proportion coming from G&P units having technologically superior primary processing facilities. AML maintains direct linkages with selective G&P units in order to maintain quality control. The scope of linkage between AML and G&P units covers price negotiations, quantum of supplies, quality specifications and areas of modernization of G&P units. The AML has also distributed video films to G&P units to create awareness regarding good practices in production, handling and ginning and pressing of cotton. Despite these arrangements temptations to keep its options open in procurement to take advantage of favourable market price remains high. This strategy also enables AML to reduce its cost of raw material and remain competitive in domestic and global markets.

8. The raw material procurement approach of cotton described above may give textile industry price and quality advantage but has led to complete neglect of productivity at farm level. Therefore, it is not surprising that Cotton Textiles Export Promotion Council (Texprocil) report cautions that India is rapidly forfeiting the cost advantage its manufacturers have in home-grown cotton. Moreover, cotton production in the country during 2002-03 has fallen to a decade low, reflecting lack of economic viability of cotton production at the current levels of productivity and price. Even in Technology Mission on Cotton, productivity improvement has not received due emphasis.

9. The Kerala Horticulture Development Programme (KHDP) was observed to be a very unique programme implemented through a mix of innovative public interventions and institutional/organisational mechanisms. The very size of the programme, which benefited nearly 41,000 farmers through 1886 SHGs over eight years and its performance in terms improving productivity of fruits and vegetables by over 50 per cent, speaks for its achievements. The interventions like Master Farmers (MFs) to manage SHGs, credit delivery through consortium of public sector banks, participatory technology development (PTD), and office-less extension systems etc., helped in evolving a sustainable model for collective action by small farmers. These interventions were implemented through informal institutions

like SHGs at the grassroots and formal but farmers managed institutions like 'farmer markets' (registered under Charitable Societies Act). The apex organisation which took over the functions of KHDP was named as Vegetable and Fruit Promotion Council, Keralam (VFPCK) incorporated under Section 25 of the Company Act 1956, The KHDP efforts to promote 'farmer- factory' linkages for farmers managed processing unit were not as successful as its 'farmer market' model. A careful analysis revealed that two major factors in its task environment were ignored at the planning stage, viz., lack of suitable processing variety of pineapple (Kew) in its command and high prices of table variety (Mauritius) extensively grown in the areas. The Command Area Development Approach attempted to overcome these limitations is producing results but only gradually.

10. The case studies covered in this paper vary widely on structural dimensions and comparisons between these studies may not be valid. However, the findings broadly suggested that farmers managed organisations, have greater 'farmer/producer-orientation' in building backward linkages. These organisations provide many ancillary services needed by the membership in addition to marketing their produce. On the other hand, private firms have greater 'procurement–orientation' and their relationship with the farmers does not go much beyond procurement. These firms hardly offer any input or extension services to the farmers. In Cotton different levels within the sector still operate independently with hardly any linkage between farmers processors. This demonstrates antagonistic interests between farmers and firms, which need to be kept near equilibrium through appropriate institutional and regulatory mechanisms.

11. The second part of the paper attempts to evolve a generic agriculture-market linkage framework within the boundaries of which various alternative initiatives can be explained and practiced. The framework would also guide research and knowledge building in this area because of its vital importance for future development of Indian agriculture. It was realised that the development of generic framework for agriculture-market linkage has to be undertaken under given externalities, redefined as concerns of Indian agriculture. The redefinition suggests 'productivity and diversification' as the core concern of Indian agriculture in the 21st century. The other concerns, which will constitute the future task environment of agriculture, will include liberalisation and globalisation, sustainability, consumer preferences and food security (redefined as nutritional and regional

food security). Accordingly, the State will have to reorient its policy framework and public interventions in a manner, which will encourage efficiency, private investment in agriculture and expansion of agro-processing activities. More importantly, the Indian agriculture has to evolve solutions relevant in its own context and increase investments in agriculture, which have fallen to a new low as against 24 per cent of GDP a decade ago.

12. At the operational level, the country needs to overcome constraints, which makes Indian agriculture a dominantly supply driven system and gradually change its course towards greater market orientation. The ideal situation would be to gradually move the current supply driven production system to a demand driven system, which will include both quantity and quality of the agricultural produce. This would mean imparting market-orientation to Indian agriculture through interventions like dissemination of market information, promoting competition and transparency in agricultural produce markets and linkage with agro-processing sector. While supporting this novel argument, questions will also be raised regarding the practicality of its implementation, particularly in the context of a highly uncertain production system like agriculture. Under the circumstances, the best that possibly can be attempted is a tactical balance between demand and supply. Moreover, this balancing approach has to be uniquely tailored in tune with the typical characteristics and requirements of Indian agriculture. Secondly, the agribusiness firms will have to maximise synergy between three important sub-system of agriculture production system namely R&D, extension and markets. Further, several initiatives will have to be undertaken to restructure processes, enterprises and institutions including capacity building of personnel engaged in its promotion. However, promoting market-oriented agriculture production should not be attempted at the cost of employment generation and food security particularly in the Indian context.

13. The growing phenomena of globalisation and its gradual liberalisation in India has triggered the process of vertical coordination in Indian agriculture. Resultantly, different steps in production, processing and marketing will become interdependent and farmer will also become a part of the larger food production system in due course of time. A review of past and ongoing initiatives in vertical coordination seem to be moving in three streams – evolution of commodity and location specific linkages between producers and agro industry under

the umbrella of contract farming, evolution of supply chain models integrating technological advancements, and promotion and regulation of these mechanisms with particular reference to contract farming. The specific initiatives covered under these categories include – Anand Pattern of Cooperatives (APC), public intervention through Small Farmers' Agri-business Consortium (SFAC), Pepsi model of contract farming, and private sector initiatives in the form of Supply Chain Management (SCM). Some of the specific initiatives in SCM include Tata Rallis strategic alliances with firms dealing in input and output and ITC e-Chaupal. In addition, Kerala Horticulture Development Programme (KHDP) was observed to be a unique programme combining producers managed informal and formal institutional mechanisms at different levels. The joint venture between MP Khadi Gramodyog Board and Hindustan Lever Ltd., (HLL) indicates a new era of private-pubic sector partnership. This enterprise will promote "Vindhya Valley" for food products under which HLL will market the board's products in the country. The commodities which have been covered so far as a part of these initiatives or likely to be covered under such arrangements include gherkin, potato, spices, groundnut, passion fruit, citrus, silk, etc., mainly destined for export. It seems that such agriculture-market linkages initially may prove more relevant and productive in cases where the end-use markets have very specific raw material/product requirements and gradually spread to many other crops and allied sector produce.

14. The in-depth learning from the case studies, a relook into past and on-going initiatives in vertical coordination in the country and empirical research undertaken in conditions similar to India provided much needed input for building the generic framework for agriculture-market linkage. The ground realities of Indian agriculture, structure of agricultural produce markets and consumption patterns were also kept in mind. More specifically, these characteristics include smallholdings and inadequacies in the quality of crop husbandry at the farm level, dominance of trade in agricultural produce marketing, and relatively rigid food consumption patterns at the household level. With these considerations, the subsequent analysis enabled identification of three important core processes, which seem to be critical in establishing effective agriculture market linkages. These processes were described as 1) Building effective backward linkages, 2) Conduct and performance of markets and marketing institutions, and 3) Demand generation through value addition. Any attempt to

improve interdependency of agriculture with industry/market will be determined by the success and failure of these processes with due consideration to the externalities which will influence these processes.

15. An efficient backward integration of industry with agriculture should lead to globally competitive production system in terms of cost and quality. As a part of this analysis we attempted to find an answer to some of the key concerns relating to the process of backward integration. These concerns were regarding, i) impact of vertical coordination on producers; ii) comparing the returns to farmers from fully coordinated sector vs. less coordinated sector; and iii) the control in the vertically linked production system. With the exception of cooperatives and farmers managed informal organisations, the impact of vertical coordination seems to be limited. The problems experienced by the producers include opportunistic behaviour of the private firms in pricing, preference for large farmers, refusal to accept the entire produce of the farmer from the contracted area, lack of long term commitment to maintain productivity and sustainability of agriculture of the contract farms, etc. On the other hand, farmers also sell their produce in the local markets when the prices are ruling high. These problems though cannot be fully resolved, but some kind of quasi-legislation is required which provides protection to the interests of both farmers and the firm. The problems of compliance of contracts, opportunistic behaviour and possibilities of exercise of market power by the firms provide enough reasons for farmers to organise themselves in formal or informal grass-root institutional mechanisms like Self Help Groups (SHGs) or Common Interest Groups (CIGs) or any other type of farmers' institutions. Such collective action will also benefit these grass-root institutions in generating economies of scale in production.

16. The vertical coordination mechanisms are also trying to discover the benefits of supply chain oriented procurement models. A supply chain increases the interdependence among the various stages in the food chain by using strategic alliances, networks and other governance structures to improve logistics, product flow, and information flow. In this regard, Tata Rallis initiative with credit institutions like NABARD/ ICICI and marketing firms like HLL/Food world have been taken to leveraging their strengths in farm inputs to bring larger benefits to the farmers. In fact Tata Rallis and even simpler model like Mahindra Shubh Labh Services bring to the farmers valuable services like inputs, credit, extension and marketing which are likely to improve off-farm productivity of farm enterprises. Similarly, ITC e-Choupal will add

much-needed efficacy to the supply chain and help farmers to increase their market realization. A quick evaluation done by IRMA on e-Choupal revealed that farmers have been benefited in terms of better price for soybean, lower transaction cost and transparency of marketing operations.

17. The time tested vertical coordination mechanism of cooperatives does not seem to be making much headway with the exception of organisations, which were established in the past. The key elements for success of their coordination effort were due to strong relationship and trust with their membership, which has been built over the years through effective marketing support, services support and transparency of the exchange process. Probably, the current generation leadership is not able to incorporate, these key elements, which were responsible for their success in the past, into potential cooperatives. Therefore, effort to promote these farmer-friendly institution must continue with due consideration to constraints in the today's task environment. In fact KHDP has provided an alternative model for building vertical coordination through an organisational structure, which is managed by farmers. The model has potential for application in different crop sectors and regions in the country.

18. As far as the conduct of markets and marketing institutions is concerned, two issues were found to be of relatively greater significance – firstly, the relative strength of spot vs. vertically coordinated markets and secondly, the conduct of marketing institutions engaged in transfer agriculture produce from the farmer to the consumer. With regard to the first issue, it has been observed that the neglect of 'market system' can lead to pricing inefficiencies particularly at local/regional level. In order to ensure pricing efficiency, the fundamental issue is 'price competition', which means a 'large number of buyers and sellers'. Some of the scholars have even contested that there is lack of empirical evidences to suggest that industrialisation of agriculture (vertical coordination) is not inevitable nor inherently more efficient than one based upon independent producers and an open and decentralised market system. Independent of this argument, it is necessary to overhaul our internal regulated marketing system in terms of monopolistic and restrictive practices that prevent free and competitive trade in agriculture produce.

19. The Government needs to examine its policies and regulations with a view to strengthen the marketing network and ensure that prices are being determined on a competitive basis and markets are not being

manipulated. Secondly, the contract and spot markets must be allowed to co-exist and one should not expand at the cost of the other. Thirdly, the issue of conduct of marketing institutions can be tackled partly through regulation and partly through promoting and supporting institutions and organisations, which are working to protect the interest of small farmers. The challenge lies in ensuring fair prices for producers to improve his capacity to make further investments in agriculture.

20. The third critical process in building effective agriculture-market linkage is the process of demand generation through value addition. This process seems to offer huge opportunity as recently assessed by FICCI which observes that in India it is a truly astounding case of neglect, where the value addition to food production is only 7 per cent compared to as much as 23 per cent in China, 45 per cent in the Philippines or 188 per cent in the UK. On the other hand, surveys also point out that the main hindrances in promoting value added products in India is the fact that Indian tastes have not changed significantly to create demand for new products. Therefore, upward movement of the agricultural produce in the value chain will be gradual and has to be carefully guided. The 250 million strong middle classes of dual income nuclear families in the country with high disposable income hold the key to the future of the food market.

21. The opportunities for value addition in agriculture exists both at the level of agricultural raw materials and/or through marketing. The marketing route will be primarily based on a set of marketing practices applicable to many other products provided the products meet the basic needs of good taste, variety (easier to purchase, prepare and eat) and affordability. Lately, nutrition and safety have also become important consumer concerns. These marketing practices should be tailored to cover all forms of value addition including packaging of commodities for the purpose of branding, primary processing and manufacturing highly differentiated products. Necessary lessons in this regard can be drawn from firms who are trying to tap even unarticulated demand of the consumer, recreate and redefine markets in value addition space through innovative products and marketing practices. However, the efficacy of any value addition should become an integral part of this process as judged by its capacity to generate demand. Further, the value addition can create far-reaching impact in terms of generating demand when the value creation process is based on consumer perspective rather than on marketer's perspective.

22. *The other dimension* of value addition through production of differentiated raw material (e.g., nutritional value or chemical composition) will become important with increase in productivity and production of staple foods and declining concerns for food security. The process of diversification will have greater chance to succeed provided agriculture also produces raw materials for a much broader set of industries, in addition to its traditional base, to facilitate manufacture of more and more environmental friendly bio-degradable products. This will require investments in R&D particularly bio-technology which can bring in radical expansion in potential uses for agricultural raw materials, e.g., agri-biomass to bio-fuel, jute as geo-textile, etc.

23. Further opportunities can be explored by segmenting the markets for agricultural raw materials on the basis of their end-use. By using this criterion, six distinct segments in two growth categories have been identified, viz., household, institutional (engaged in ready-to-serve/ ready-to-eat segment), agro-export, food processing, industrial and feed-fodder. Each of the segments presents an opportunity of its own as it is happening in health and pharmaceutical products (industrial segment). This approach will facilitate diversification of agriculture to improve its capacity to produce raw materials/products with specific attributes for unique end-use markets.

24. The study does indicate that lot of changes can be anticipated in agriculture-market linkages in future. A quick appraisal of policy instruments relating to core processes identified in the generic framework highlights the need for new policy initiatives and strengthening some of the existing provisions of National Agriculture Policy and other related policies. At the macro level, there is a need to make agriculture more responsive to demand, i.e., achieving greater market orientation. Such orientation will require policies, which will enable information, technological and marketing support to farmers to improve cost efficiencies, improve product quality and enhance access to competitive market price. Some of the existing provisions of the National Agriculture Policy on marketing, quality improvement in agro-processing, institutional reforms and favourable economic environment do cover major items; but a review of the follow-up actions suggested that little has been done in terms of programmes and schemes to translate these policies into reality on ground. The sole exception is the launch of the Agricultural Marketing Information Network (AGMARKNET).

25. At operational level, the generic framework identifies two sub-processes which will need policy support towards achieving effective backward linkages. The open marketing system for agricultural commodities should achieve desired level of efficiency by being more competitive and transparent. The government should remove all hurdles in free movement of commodities apart from improving methods to determine quality and value of commodities. The new institutional mechanism like farmers' markets and agriculture futures will go a long way in improving the efficiency of the commodity marketing system. The policy support should also be provided to strengthen institutional mechanisms like SHGs and cooperatives to strike a balance in the market power of farmers owned and privately owned agribusiness firms and improve their conduct in the marketplace. The recent changes in the national policy on cooperatives to enable them to work as autonomous, self reliant and democratically managed institutions needs to be implemented rigorously.

26. The vertical coordination is gradually catching up to control quality and market risks and the stage is ripe to promote vertical coordination in commodities like cotton where the end-use markets have very specific raw material/product requirements and benefits are going to be large. At the same time, the state needs to introduce necessary amendments to the existing APMC Act and also come out with a model legislation to promote vertical coordination through contract farming and supply chain management initiatives.

27. The study advocates favourable policies for value addition in agriculture through both marketing and production of differentiated agriculture raw materials. The agro-processing route has been getting policy support for quite some time, but results have not been very encouraging. The need is to understand the reasons for such policy failure on one hand and also promote value addition in other market segments wherein differentiated agricultural raw materials can be used to improve probability of successful diversification of Indian agriculture.

28. There is a need to undertake new research in the areas identified above to get at these important questions. The other research priority can be with regard to upgrading specific details and documentation of the three core processes under varied task environments. The research can also focus on the feasibility of adding fourth core process, viz., 'market exchange' to cover sub-processes like wholesaling and retailing of commodities and food products.

CHAPTER 1

AGRICULTURE-INDUSTRY LINKAGE - CHALLENGING ISSUES

1.0 Introduction

Agriculture in any country goes through a cycle of development process which can be termed as 'commoditisation to commercialisation'. The commodity oriented agriculture is supply driven wherein the emphasis is on production of bulk commodities which are sold in spot markets. At this stage, even the markets restrict themselves to commodity orientation because consumers demand undifferentiated commodities at lower cost. Further, the production-market interfacing is dictated by the consumer response to market prices. These price signals are interpreted by the intermediaries, modified according to grades and standards and sent back to the farmers. In other words the purchase or procurement of agriculture produce is based on such market-pricing mechanism or price signals. It is alleged that in such markets the trade engages itself in manipulating these price signals resulting in market imperfections. It is possible that these market imperfections affect the process of agriculture development by influencing the pace of 'commoditisation to commercialisation' cycle.

Despite the cost effectiveness of the production system at the commoditisation stage, the agriculture transition towards commercialisation is natural though its pace may be influenced by external factors like agricultural policy framework, extent of market imperfections, overall standards of living of majority population, etc. The important reasons for such transitions are:

- The agro-processing industries may integrate backward to own the sources of supply to achieve assured supply of raw material, reduce transaction costs and minimise losses.
- Changing consumer demand from undifferentiated commodities to differentiated products with rise in standards of living and the need to satisfy their variety seeking behaviour. With such structural changes in the market towards value addition, the focus shifts to the final food products rather than the initial commodity. As the phenomenon of value addition in the food sector increases, the required specifications for the raw materials also become more

specific and sometimes stringent. The traditional commodity based production–market interfacing is not adequate in adapting to accommodate new consumers and processors' demand in terms of product specifications. These new requirements serve as incentive for vertical integration or vertical coordination.

- The search for new economic opportunities by the entrepreneurs and firms in the farm sector. In fact, the transition from 'commoditisation to commercialisation' opens up new opportunities for manufacture of value products and in turn higher profit margins. Such opportunities are not available in the commodity-oriented markets which are characterised by low margins.

Indian agriculture is also undergoing such transition which has been described in this study as 'commoditisation to commercialisation'. Currently the value addition to food as a whole is estimated to be just 7 per cent in Indian agriculture which is very low, but the trends indicate that the value addition process is gradually gaining momentum though selectively. The food processing industry segments showing consistency in growth includes edible oil, biscuits, alcoholic beverages, bear and to some extent processed foods. At the same time, the consumer expectations from the marketplace with regard to variety and quality in food have multiplied in recent years. The process is likely to gain further momentum with opening up of Indian markets to imported value added food products resulting in diversification of food consumption at household level. The exposure of consumers to these products will further raise their expectations from the marketplace. It is high time that the Indian agricultural planners pay greater attention to the demand side of agriculture to enable agriculture production system to become increasingly aligned with the requirements of the consumer. In other words, the agriculture sector should now attempt to achieve greater market-orientation compared to its current focus on production-orientation. Generally, commercialisation of agricultural production system drives it towards greater market orientation.

1.1 Rationale for Vertical Coordination

The dimension of 'commoditisation to commercialisation' cycle would call for tight coordination of links between production, processing and marketing to accommodate manufacture of products based on consumer driven demand. Such products with homogeneous product specifications require qualitatively homogeneous supply of agricultural raw materials. This in turn, will lead to increasing stringency in the

specifications of the raw materials required and will alter the existing interface between production and marketing of food products. The magnitude of such alteration will increase with increasing value addition in the food processing industries. It is for this reason that many food-processing industries in India complain of difficulties in procuring the right quantity and quality of raw material. The origin of this problem can be traced to the neglect of demand side in our agricultural development programmes. Lynam and Janssen (1992) pointed out that agricultural research on food staples has traditionally stressed production linkages but little thought has been given to how research can promote consumption linkages by shifting the demand by improving product attributes in terms of enhanced nutritional quality and improved convenience. Furthermore, research may increase demand by segmenting the market and in turn lead to their expansion through product diversification in terminal markets. Streeter et.al. (1991) Suggested that in an increasing consumer-oriented business environment, information technology has enhanced and hastened coordination. By quoting examples from the developed countries he illustrated several ways in which information technology has facilitated, if not caused the shifting of marketing.

This view of vertical coordination in the food and agribusiness sector will shift part of the marketing effort toward discovery of consumer preferences rather than manipulation of the same by the retailers. Information technology is shown as a means of coordinating activities across levels in order to assure certain product attributes. The framework suggests that now consumer can also evaluate additional characteristics which were previously experienced only indirectly, viz., product quality, nutrition, food safety and environmental aspects (whether organically grown) in addition to traditional aspects like variety, convenience, price stability, and value etc. (Fig.1). The framework also highlights that some of the product attributes, which cannot be created during the market process, will have to be ensured from the beginning of production-marketing chain. This puts into question the traditional view that product differentiation is the responsibility of the marketing sub-sector (wholesalers and processors) and not the production sub-sector (producer and input supplier). This view combines well with that of Lynam and Janseen (1992) that balancing demand expansion with production increases implies the integration of the two activities, i.e., demand-side research is not an alternative to production-side research but greater impact will be achieved by integrating the two.

However, the Streeter et.al. Framework has not been able to answer – *why the traditional commodity-based approach to supply is not adequate in adapting to accommodate changing consumer and* processor demands?

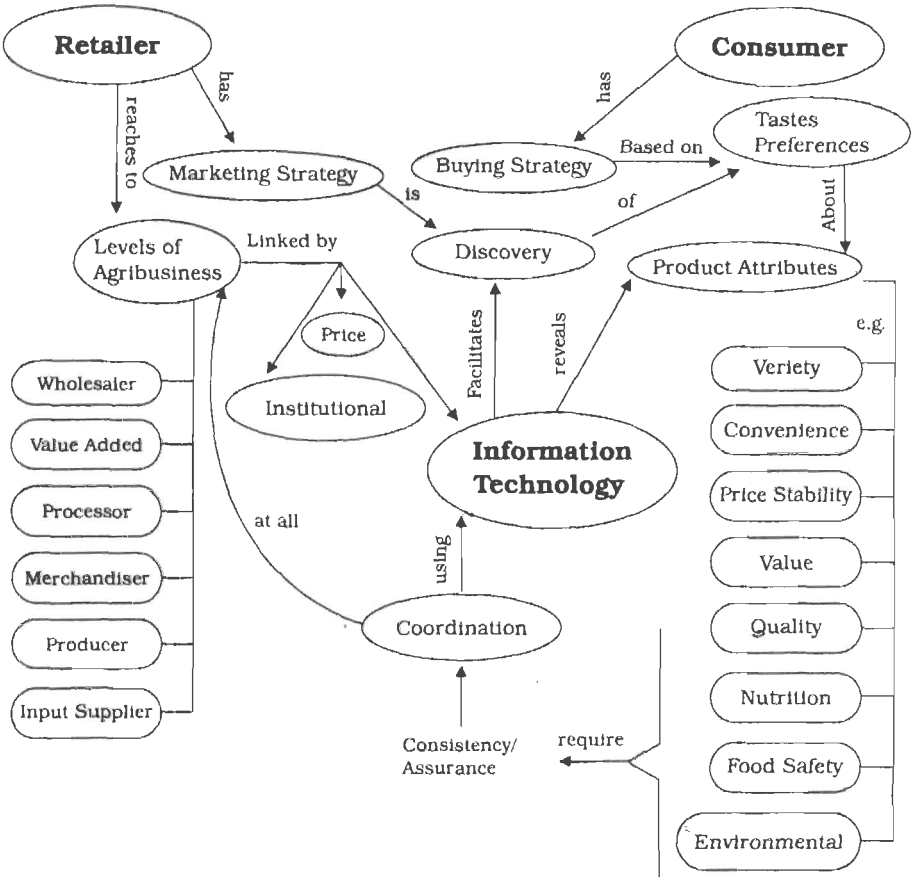

Fig. 1 : IT Based View of Coordination in Food and Agribusiness Sector

Source: Streeter, et. al (1991), "Information Technology, Coordination and Competitiveness in the Food and Agribusiness Sector, Amer. J. Agr. Econ.73(5): 1465-1471.

Specifically, why are processors not sending adequate signals back to producers by appropriately pricing commodity attributes without becoming involved in the production process through production/ marketing contracts or vertical integration (Hennessy,1997)? The author suggests market failure in conveying information about quality as a motive for increased vertical coordination. This information failure

gives rise to a processor incentive to circumvent test costs by vertically integrating or sourcing via production contracts. The problem may be particularly relevant for products where quality is hard to identify in raw product, or is at a premium. Examples might be produce for 'niche' or export market, produce of certain quality for processors, pesticide residues reduction, etc.

The above discussion clearly brings out the need for newer type of linkages between the participants in the food chain from producer to consumer. The existing linkages, which are conditioned by price signals between various levels, will be replaced by newer linkages based on better information flows and information sharing with regard to product specifications of agricultural raw materials. The information sharing should lead to qualitatively improved coordination of production and marketing activities. On the other side, scholars also see vertical integration as a means for firms to reduce competition or extract market rents (Perry 1978a). He observed that in reality firms may use vertical integration for a number of reasons, including achieving increased efficiency, reducing transactions costs, reducing price risk or assuring supplies, but strategic use of vertical integration by firms focuses on achieving higher profits from at least two sources, i.e., efficiency gains of expanded production and partial backward integration may result in a reduction in the dominant firm's acquisition price for externally supplied raw inputs.

1.2 Typology of Coordination Mechanisms

The questions, which arise at this stage, are with regard to new ways of organising production and exchange of agricultural commodities to address the emerging consumer needs and preferences. These new means should replace the old market-pricing mechanism to procure agricultural raw materials. It is generally felt that the linkages between the farmers and the processors or manufacturers have to change from open and impersonal spot market exchanges to negotiated and closed contractual relationships. However, the debate with regard to negotiated or closed market system vs. decentralised market system is also gaining momentum, because the efficiency of the market system or lack thereof has tremendous implications for the future structure of agriculture.

In the recent past, many variations of coordination strategies have emerged particularly in food markets. In order to facilitate firm level decision making with regard to choice of a coordination strategy, Peterson, (1997) conceptualised coordination as a continuum running

from open markets to complete vertical integration (multiple market stages under single ownership). Although this idea of a continuum is intuitively appealing, most of the prior theoretical work has focused on the two ends of the continuum, i.e., spot markets and vertical integration, while the middle of the continuum has been largely unexplored. The continuum hypothesised is presented in Fig.2.

Strategic Options for Vertical Coordination

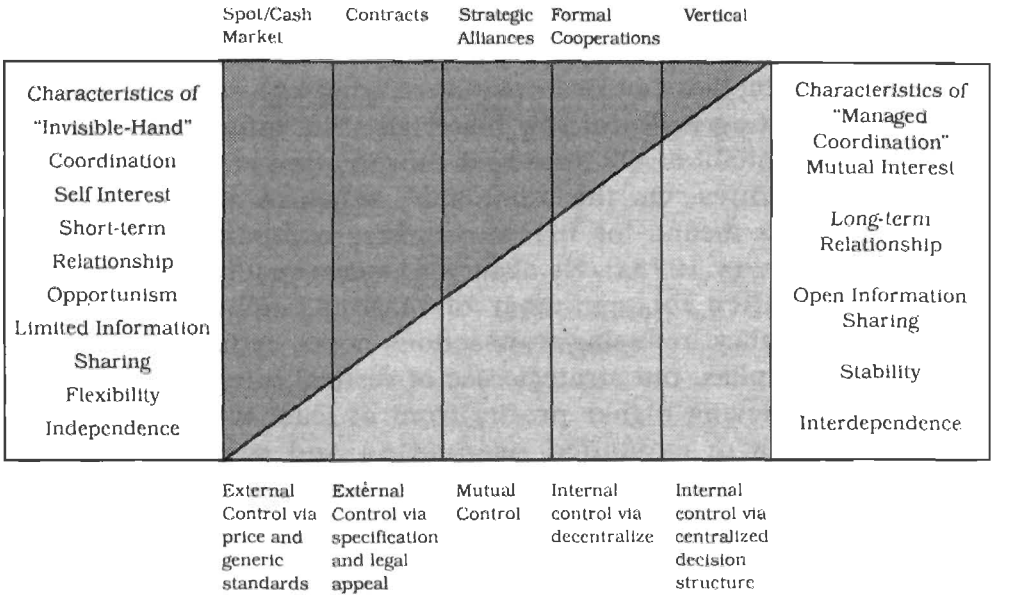

Fig. 2 : The Vertical Coordination Continuum

The five major categories of coordination are suggested from spot markets to vertical integration. The continuum suggests that as strategies are considered from left to right, coordination moves from being dominated by invisible-hand characteristics (self-interest) through a changing mix of invisible-hand/managed characteristics to being dominated by managed characteristics (mutual interest). In between the continuum is contracting – the legally enforceable establishment of specific and detailed conditions of exchange; strategic alliance – as an exchange relationship in which the firms involved share risks and benefits emanating from mutually identified objectives and formal cooperation through a formal organisation that has an identity distinct from the exchange actors and that is designed to be their joint agent

in the conduct of a cooperative exchange. The agricultural cooperatives lie at this point on the continuum.

The vertical integration in this version of the continuum is a mechanism that relies upon centralised control to achieve coordination. It can be observed that coordinating mechanisms move from completely external in form (spot markets) to completely internal in form (vertical integration) while passing through several transitional stages of mixed form (contracts, strategic alliances, and formal cooperation). Although ownership is correlated with this transformation, it is not (as historically argued synonymous with it (Peterson, 1997).

The vertical coordination is a rather broad term, which encompasses all means of harmonising vertically interdependent production and marketing activities ranging from spot markets through various types of contracts to complete integration (Frank and Henderson 1992). In comparison to coordination continuum Rehber (1998) observed that in agriculture four types of vertical coordination between farmers and off-farm businesses are generally recognised, viz., coordination without any contract (spot market or open market), contract farming, ownership integration and farmer cooperatives. Some of the important characteristics of each of these coordination mechanisms are described below:

1.2.1 Spot or Open Market

The traditional commodity markets (spot or open) generally trade in homogenous product that meets standardised minimum quality factors for delivery to a specific location on a specific date. These markets do not transfer enough information between the producers, processor and end-user to ensure that the agricultural produce contents are matched to end-use applications. Therefore, increasing occurrence of value addition in food processing will also result in stringency in specifications for the raw materials which the spot markets may fail to deliver.

However, the basic argument put forth by the proponents of open markets is that the industrialisation of agriculture is not inevitable nor is it inherently more efficient than one based upon the independent producers and a decentralised market system (Coffey, 1999). The argument put forth is – if the independent producer does not have access to a competitive market price, nor a method to manage his price risk, he will be forced into a contractual relationship. He went on to suggest that the neglect of the market system to force agriculture to

contracts and integration may lead to pricing inefficiencies and it must be ensured that prices are being determined on a competitive basis and the markets are not being manipulated.

1.2.2. Vertical Coordination

The other school of thought identifies market failure as a possible reason for the inability of the market-pricing system to accommodate the consumer-driven demands for more detailed and homogeneous product specifications. In this context, the different vertical organisational mechanisms which can coordinate the transformation of commodities to differentiated food products have been classified into two areas, viz., Vertical Coordination and Vertical Integration. The terms Vertical Integration and Vertical Coordination are often used interchangeably. The vertical coordination is a more comprehensive structure and includes all means of vertically harmonising exchange between two successive stages in a market channel, e.g., between growers and processors or manufacturers. Vertical coordination is chosen over vertical integration because of its flexibility. It allows firms to obtain inputs with specific characteristics without getting into another business (farming) where large investments in specific assets are required. Vertical coordination reduces uncertainty for the farmer and provides a more stable income while allowing him to maintain ownership of his business.

Amongst various types of vertical coordination, contract farming is becoming an important part of agribusiness and a preferred means of backward integration by the firms needing reliable supply and quality of agricultural raw material. Schrader (1986) describes contracting as a means "to coordinate successive stages in a commodity system. It includes a wide variety of arrangements spanning a continuum between open production (produce and then sell) and integration. That is, it includes all arrangements between pure market coordination and intrafirm – administered coordination of two or more stages of production."

A recent study by FAO pointed out that a well-organised contract farming appears to offer an important way in which smaller producers can farm in a commercial manner. The study presents a hypothetical contract farming framework that must be considered when planning and implementing such venture (Fig.3).

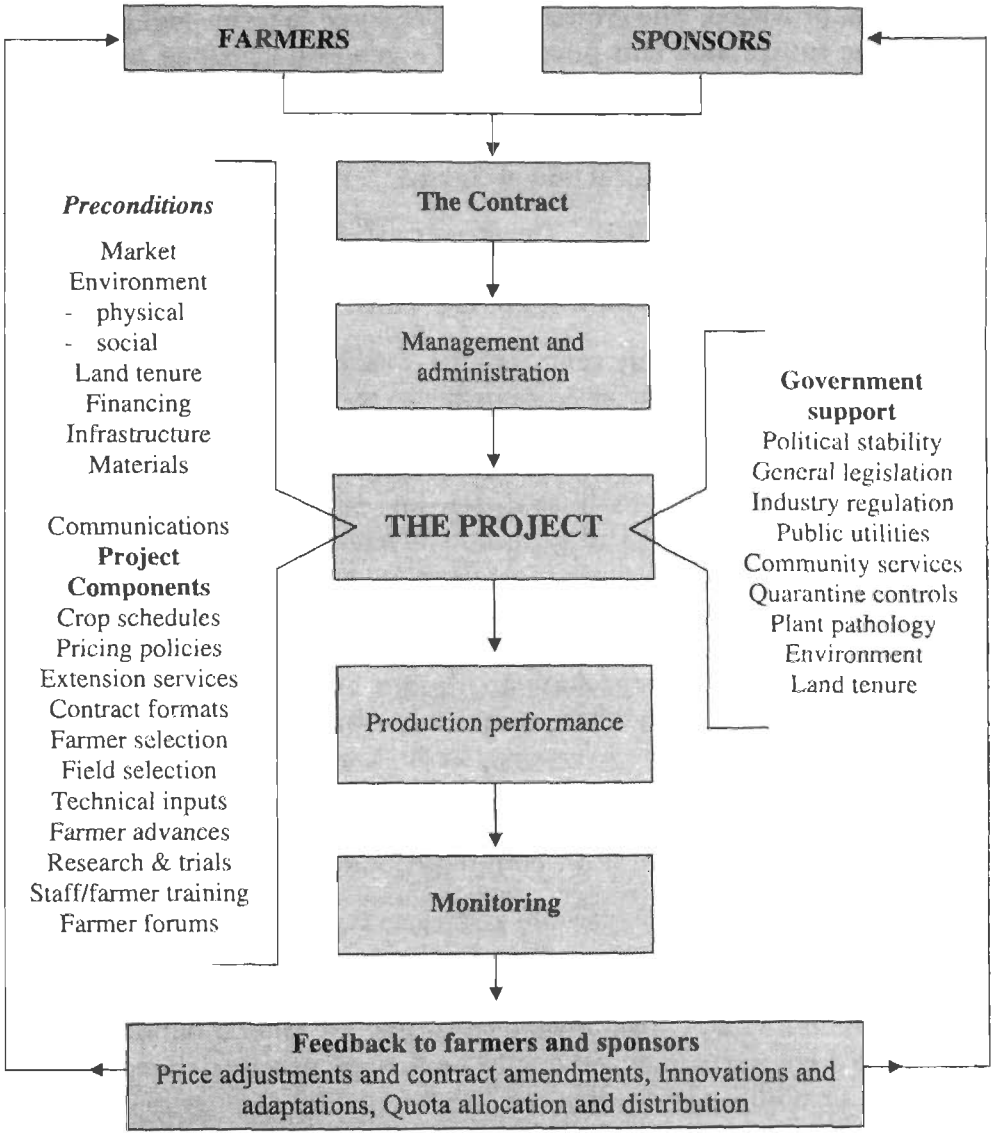

Figure 3 : A Contract Farming Framework

Source: Eaton, C.S., 1998b: 274(Extracted from FAO Ag. Service Bulletin 145)

The study suggests that contract farming also provides investors with the opportunity to guarantee a reliable source of supply, from the perspectives of both quantity and quality. The document points out that the intensity of the contractual arrangement varies according to the depth and complexity of the provisions in each of the following three areas:

- Market provision: The grower and buyer agree to terms and conditions for the future sale and purchase of a crop or livestock product,
- Resource provision: In conjunction with the marketing arrangements the buyer agrees to supply selected inputs, including on occasions land preparation and technical advice,
- Management specifications: The grower agrees to follow recommended production methods, inputs regimes, and cultivation and harvesting specifications (Eaton and Shepherd, 2001).

The above categorisation seems to be based on Mighell and Jones (1963) who classified contracts according to the portion of the marketing chain they regulate: (1) market specification contracts, (2) production-management contracts, and (3) resource-providing contracts. Drescher (2000) identified three main features for differentiating contractual coordination - authority, duration and investment. These dimensions characterise the core elements of contractual relationships. He went on to suggest that in analysing contract farming, the depth or intensity of contracts is as important as the extent of the contractual arrangements. Further, it will be appropriate to define and specify agricultural contracts more precisely than commonly done. This is necessary, if changes in consumer preferences, product quality or technology are to be integrated with contractual arrangements between farmers and the contracting firms. In turn, some strategic consequences can be derived, viz., spot, leadership, command and cooperation.

The firms pursuing cost-leadership strategies typically produce standard, or no-frills, products and place considerable emphasis on achieving scale or absolute cost advantages. Those firms often act on spot-markets. The firms seeking a competitive advantage through a differentiation strategy tend toward contracts in which quality claims are exactly defined, without giving up flexibility for adjustment to new quality requirements in the future. These food firms, therefore, commonly enter into leadership-contract types with farm-firms. Finally, command contracts will conclude in those sectors where product qualities cannot be evaluated by the final consumer in normal use. Instead, the assessment of their value is not possible at all or requires high additional costly information (Drescher, 2000). Based on the conceptual framework described above and empirical findings of the study suggested that German Food Industry offers only a limited number of 'long-term' contracts. The majority of contractual relationships in Germany can best be described as short-term agreements with a few binding penalties.

Even in India, the shift to contract farming is becoming noticeable due to changes in the organisation of enterprises in agro-processing under the impact of liberalisation and globalisation. The nature of existing imperfections in agricultural markets and information technology have provided further momentum to this change.

1.2.3. Vertical Integration

The vertical integration is one of many possible types of vertical structures. In this type of integration, each individual farm loses its identity and becomes a company-owned farm. The company owns or leases the land, buildings and equipment and has its own employees (Rehber, 1998). Similarly, Aust (1997) observed that the key to vertical integration is asset ownership. Vertical integration is defined as the ownership of the production and processing. It is assumed that the transaction costs are reduced by internalising production and processing assets. The uncertainty of supply, quality and size is greatly reduced but not totally eliminated due to the high cost of information. However, Peterson (1997) observed that the vertical integration is not so much defined by single ownership as it defined by centralised control. Although a corporation operating at multiple levels in a production/ marketing chain may have single ownership, it need not constitute a case of vertical integration if the business units of that corporation are allowed to operate autonomously, i.e., in decentralised fashion. Such a corporation operates as a form of formal cooperation and not vertical integration. Vertical integration in his version of the continuum is a mechanism that relies upon centralised control to achieve coordination.

1.2.4 Farmer Cooperatives

An agricultural cooperative is an organisation usually owned and controlled by agricultural producers, which operates for the mutual benefit of its members as producers or patrons (Rehber 1984). The farmer cooperatives are typically involved in trading, primary processing or marketing usually characterised by little market power and low margins. At the same time, cooperatives seem to be well positioned to coordinate product differentiation at the farm level and to integrate forward into value-added processing activities. However, the ground reality is different and therefore, the past discussions have focussed on explaining - why cooperatives have not been successful in integrating forward into high-margin, value-added activities to a greater extent? The possible explanations include the argument that co-operatives are often insufficiently capitalised to make the substantial investments in research and development and in advertising necessary

to be successful in processed markets (Rogers & Marion, 1990). In addition to inadequacy of equity capital, other factors related to cooperative ownership, capitalisation, and governance may limit cooperative vertical expansion. These factors include an inherent aversion to investing in activities that are perceived as risky and limits on the ability of a cooperative board of directors to supervise and assist management as the organisation's scope grows vertically.

1.3 Challenging Issues

The operation of agriculture markets particularly in developed countries is gradually moving away from open market transactions. Increasingly, the production and marketing of agricultural products have been coordinated by forward contracting, production and marketing contracts, and vertical integration. The degree to which these alternative marketing mechanisms have been employed varies across commodities and products (Royer, 1996). The organisation of Amul on Anand Pattern Cooperatives (producers' cooperatives are also a type of ownership integration) in mid 50s and introduction of Production Contract in chicory by HLL (farmer-private sector coordination) nearly a decade later were some of the early initiatives in India in this direction. Currently, contract farming is being talked about in many commodities and geographical reasons and it is being suggested that such a linkage can resolve many of the problems relating to agricultural production and marketing system. The experience of developing countries in this regard also raises many questions with regard to suitability of contract farming as a model for agricultural development in India. The relevant questions are:

- When and why these coordinating mechanisms including contract farming should replace the current (open market) arms length transactions?
- The suitability of contract farming with reference to various categories of farmers (small holders), commodities and geographical regions.

Lately, some initiatives have been undertaken in India to overcome challenges in organising agricultural supply chain. These partnerships are in crop production, processing, research and development (R&D) and extension services marketing (FICCI, 2002). Some of the success stories have generated further debate on an appropriate model to establish agriculture – industry linkages in Indian context. Therefore, in addition to the questions raised above we need to find an answer to a much more holistic question:

- What are the possible alternative integration mechanisms available to producers to achieve greater market orientation and improve profitability?

1.4 Study Approach and Description

This long term research study based on four case studies undertaken between the period 1998-2001, not only attempts to answer the above questions but also attempts to evolve a conceptual framework for linking agriculture – industry in Indian situation. The objectives of the study were (a) to look beyond old market-price signalling mechanism and (b) explore newer means of integration which may prove to be more efficient and responsive to trade, agro-industry and the consumer.

As the study progressed its scope was enlarged to cover 'agriculture-market linkage' as against 'agriculture-industry linkage' proposed at the beginning of the study to make it 'holistic' in terms of realities as observed in Indian agro-produce markets. In fact it was observed that 'agriculture-industry linkage' is a sub-system of 'agriculture-market linkage' and reflects realities as observed in Indian agriculture produce markets. The study approach is more or less similar to the sub-sector approach wherein sub-sector is viewed both as (a) a set of activities and actors and (b) the rules governing those activities (Staatz, 1997). However, this approach demands that the boundaries of the sub-system need to be clearly defined depending on the problem being analysed.

The study was conducted using 'Case Study' methodology. The methodology was helpful in clarifying the nature of problems in agriculture industry linkage in each case and identifying relevant variables and nature of their relationship. The cases covered and reported in this study include: 'Marketing of Horticultural Produce' through Valsad District Fruit and Vegetable Cooperative Federation Ltd., Gandevi, 'Contract Farming of Chicory in Gujarat' and with particular reference to Hindustan Lever Limited (HLL); 'Procurement of Cotton' by Arvind Mills Ltd., Ahmedabad and organising 'Production and Marketing of Horticulture Produce' under Kerala Horticulture Development Programme (KHDP).

The presentation of the report has been organised into three sections – Introduction covering background including necessary details relating to this study, followed by a section on description of four case studies. The discussion and conclusion are presented in the last section including a generic model on agriculture-mark

CHAPTER 2

MARKETING OF HORTICULTURE PRODUCTS - A CASE STUDY OF COOPERATIVES IN SOUTH GUJARAT

2. 0 Introduction

India is among the top ranking countries in the world as far as production of fruits is concerned. It is stated that the annual production of fruits and vegetables in this country is about 104 million tonnes and 30 per cent of this is damaged due to inadequate/improper post-harvest handling and lack of adequate processing facilities. These produce are highly perishable in nature. Moreover, they are seasonal. Further, a substantial number of fruits and vegetable growers consists of small farmers. They cannot individually carry out the tasks of linking the production and consumption centres separated by a large distance due to lack of economies of scale in these processes. Many studies have shown that the farmers most often receive less share in the consumers' price for these produce. Hence formation of co-operatives has been attempted in many parts of the country with a view to (a) establish the bargaining position of the farmers with the buyers, (b) spreading the price risk over a large amount of produce in order to reduce the risk of an individual farmer and (c) discipline the market to reduce the unfair trading practices. These co-operatives have been either fresh marketing co-operatives or assembly co-operatives or bargaining co-operatives or vertically and/or horizontally integrated co-operatives.

An assembly co-operative might just bring the produce of its members together from farm gate to its warehouse. Thus it adds value to the produce by providing it as needed by the next stage of the marketing channel, probably the local traders. On the contrary, a fresh marketing co-operative has to go beyond assembly function and physically handle and process the raw product for the market and has to do its own marketing functions. This is said to be the simplest form of integration after assembly. Bargaining co-operatives are just to bargain for the terms of trade with the first handlers of the produce. Based on the experience gained over a period of time many co-operatives have found out that production and marketing of fruits and vegetables need a substantial number of inputs and supplies. Hence with a view to increase the margins of their members, some of them have started supplying inputs and other related services needed for production. At a later stage, they started

processing the fruits into various other products. Likewise, they have felt the need to work together with similar cooperatives in the region in order to overcome common problems and hence entered into working arrangements. This was possible mainly due to the sharing of the same goals and objectives by these co-operatives. Thus they have reached the stage of horizontally and vertically integrated co-operatives.

This study is one of the four case studies undertaken and reported as a part of larger study titled "Agriculture-Industry Linkage: Evaluating and Evolving a Conceptual Framework for Indian Situation" as a part of research programme of the NABARD Chair Unit, IRMA. The specific objectives of this study are to get insights into the 'organising element' of these cooperatives as reflected by (a) the types of services provided by these co-operatives to their members (b) importance and satisfaction levels of the members for these services and (c) to un-cover possible framework of operational dynamics of these cooperatives.

2.1 Methodology

The present study is on Fruits and Vegetable co-operatives in the Gandevi Taluka of Navsari district in Gujarat. The following eight co-operatives in the district are engaged in the business of Fruit and Vegetable:

Amalsad Khedut Vividh Karyakari Sahakari Mandali Ltd, Amalsad,
Ajarai Khedut Vividh Karyakari Sahakari Mandali Ltd, Ajarai,
Gadat Khedut Vividh Karyakari Sahakari Mandali Ltd, Gadat,
Dhanuri Khedut Vividh Karyakari Sahakari Mandali Ltd, Dhanuri,
Karel Khedut Vividh Karyakari Sahakari Mandali Ltd, Karel,
Manekpur Khedut Vividh Karyakari Sahakari Mandali Ltd, Manekpur,
Gandevi Khedut Vividh Karyakari Sahakari Mandali Ltd, Gandevi,
Navsari Khedut Vividh Karyakari Sahakari Mandali Ltd, Navsari.

All these eight mandalis (co-operatives) have joined together to form Valsad (erstwhile district now bifurcated into Valsad and Navsari districts) Jilla Fal Ane Shakbhaji Sahakari Sangh Limited, Gandevi. With the exception of Navsari Co-operative, all others are located in Gandevi Taluka and were included in the study. The findings of the study (except Manekpur co-operative) are based on discussions with the Secretaries of these co-operatives and secondary data with the help of a structured schedule. The activity profile of these cooperatives is placed at Annex 1. In addition, 43 members belonging to these co-operatives were interviewed with the help of a structured questionnaire.

Table 2.1: Number of Respondents (Cooperative-wise)

Name of the co-operative	Number of respondents
Amalsad	14
Gadat	10
Ajarai	7
Dhanuri	7
Karel	5
Total	43

The relatively larger representation of Amalsad and Gadat co-operatives in the sample was primarily due to the size of their membership.

2.2 Membership Profile

The membership profile of the cooperatives selected for the study as on 30th June 1998 is presented in Table 2.2.

Table 2.2: Profile of Co-operatives

Particulars	Name of the co-operative					
	Amalsad	Dhanuri	Gadat	Gandevi	Ajarai	Karel
Year of registration	1941	1918	1944	1950	1960*	1957
Area of operation	17	1	8	11	5	5+20**
Membership						
A Grade	3997	250	3157	2173	184	3400
B Grade	4451	150	250	184	157	350
Audit Class	A	A	A	A	A	A

* Operations started from 1990. ** Non-member villages

The Ajarai co-operative was registered in as far back as 1960, but started its operation only in 1990. Therefore, most of its members were members of Gandevi till 1990. Another deviation was observed in Karel co-operative which entertains farmers from 20 non-member neighbouring villages, which do not have co-operatives of their own. In general, a member of any of these co-operatives cannot deal with any co-operative other than where he/she is holding membership.

Interestingly, these cooperatives have two types of membership – 'A' Grade (active members) and 'B' Grade (nominal members). In principle, the membership in A category represents members having own land in the area of operation of the co-operative and supply the entire produce to the co-operative for marketing. The membership in 'B' category is based on ownership of land within the jurisdiction of the cooperative or to the extent of supply of fruit and vegetable produces to the cooperatives. The sub-categories of membership in B category can have one of the four possible typologies: - (a) might not own land in the area or (b) might own land in the area but do not supply the entire produce to the co-operative or (c) might own land outside the area and supply the produce to the co-operative or (d) might not own land and do not supply any produce to the co-operatives. There seems to be uniformity in description with regard to A category membership across all the co-operatives, but varies from cooperative to cooperative with regard to B category membership, e.g., some of the cooperatives do not accept B category membership from members outside their geographical jurisdiction.

2.3 Business Activity Profile

All these cooperatives are engaged in trading of chickoo and also mango and paddy (with the exception of one cooperative Dhanuri). The other produce traded by some of these cooperatives include banana. The banana and elephant foot activity is undertaken by these cooperatives primarily to help their members as these crops are grown as inter-crops in mango and chickoo for five years in high density and for ten years in low density plantations.

Amalsad is the largest cooperative trading nearly 11-12000MT of chickoo/annum while the next largest is Ajarai handling around 2800MT of chickoo/annum. The Gadat cooperative handles maximum quantity of mango (1400MT/annum) while Karel cooperative handles highest quantum of paddy (8648MT/annum).

The trading is seasonal in nature and done under various arrangements, which may range from local trading, trading through taluka cooperatives, sales agencies in important markets (New Delhi, Indore, Chandigarh, etc.) and their own federation (Annex 1). The trading of chickoo is done by the brokers/agents engaged by each of the cooperative in wholesale market in New Delhi. In addition to processing, the mangoes are traded locally in Gujarat. Some of these co-operatives such as Gadat organise open sales stalls at Ahmedabad and Surat during May every year for retail and

wholesale of the mangoes. The other commodities such as Elephant foot and banana are minor in nature and the co-operatives have not taken much interest in them except for assembling them at their warehouses and dealing with local traders.

In case of paddy, the Gandevi Taluka Sangh (apex body of all types of co-operatives at Taluka level) procures the produce directly from primary members of co-operatives (with exception of Karel co-operative) and provides storage facilities in its own warehouse. It levies a service charge of Re.1/- per bag for providing necessary facilities to these members. However, the payments to members are made through the respective co-operatives to enable them to recover the dues from the members towards purchase of various inputs and services. The Karel co-operative is procuring paddy on its own and have four warehouses for storage of the same. It trades in rice under 'Double Kisan' brand through traders in various parts of Gujarat.

In due course, these cooperatives have created necessary facilities and infrastructure for smooth conduct of their business (Table 2.3).

Table 2.3: Infrastructure for Disposal of Commodities

Commodity	Infrastructure with various co-operatives					
	Dhanuri	*Amalsad*	*Gadat*	*Gandevi*	*Ajarat*	*Karel*
Chickoo	ß Grading, Packing and transport à					
Mango	n.a.	ß Grading, processing, Packing and transport à				
Paddy	n.a.	ß Storage by Taluk Sangh à				Processing & storage
Elephant foot	n.a.	-	Transport	n.a.	n.a.	n.a.
Banana	n.a.	-	Transport	Transport	n.a.	n.a.

n.a. - Not applicable

The process of grading chickoo is highly mechanised in Amalsad and Gadat while in remaining cooperatives, it is carried out by experienced manpower, but all the co-operatives have semi-automatic packing machines for chickoo. In case of mango, grading is carried out manually based on the ripeness and appearance of the fruit, as mechanical grading of mangoes was not possible due to substantial number of varieties and different types and shapes of mangoes.

The chickoo does not undergo any processing but nearly one third of the mangoes are processed to manufacture mango pulp under the

banner of federation. In the year 1999, the federation has resorted to the production of intermediate products needed for mango pickle manufacture with a view to arrest the sliding prices of mango when harvests are bumper. Under an arrangement, the finished product is distributed among these co-operatives in accordance with the raw material supplied by them. The mango pulp is sold by all these co-operatives under the brand name 'AMIDHARA' of the Federation.

2.4 Scope of Services

The cooperatives provide a range of services to its membership, which are related to production system, post-harvest management operations, trading and marketing. The scope of backward linkages to improve efficacy of the production system and forward linkages to improve efficiency of the trading/marketing system is detailed below:

2.4.1 Backward Integration

The intensity of the relationship with membership has become much more pronounced due to the provision of strong backward integration by these co-operatives. Such integration is achieved through a range of services extended to the membership. The perception of the management with regard to utilisation of services by the members is presented in Table 2.4.

Table 2.4 : Scope of Backward Integration in Terms of Services and their Utilisation by Members

Services	Members (%) utilising the facilities provided by various Co-operatives					
	Amalsad	Dhanuri	Gadat	Gandevi	Ajarai	Karel
Fertilisers Pesticides	100 100	40 20	100 40	100 100	60 60	30 25
Bio-fert. Credit	- 70	60 85	- 90	- 55	40 50	- 40
Tractor for tillage	40	70	80	25	60	0
Advance	80	Negligible	90	85	50	50
Agricultural Implements	Negligible	n.a.	Negligible	n.a.	n.a.	n.a.
Seminar	Occasionally	n.a.	10	n.a.	Occasionally	Occasionally
Fruit Fly Project	ß All farmers in the region à					

n.a. – not applicable

The above information indicate that range of services include supply of inputs like fertilisers (both chemical and bio-fertilisers), pesticides and seeds (in case of paddy), credit, monetary advances, tractor (on hire basis), agricultural implements, supply of petrol and diesel, etc. The technology transfer is done through activities like seminars on cultivation practices and organising pre-season meetings for all the members in case of chickoo and mango. The serious production problems are resolved on project basis such as fruit fly project to control pest infestation. The extent of use of these services was relatively high in fertilisers, pesticides, followed by credit and other monetary advances.

The most widely availed services are that of fertilisers and pesticides followed by monetary services like credit and advances. The management of these cooperatives believes that the credit, advance, tractor for tillage and supply of diesel (offered by Amalsad, Gadat and Karel co-operatives) have also assumed an important role in strengthening the backward linkages. It was claimed by these co-operatives that all the members are using diesel supplied by them and wherever not made available, it is procured from the pumps of the Gandevi Taluka Sangh. Further, fruit fly project benefits all the farmers of chickoo and mango in the entire region irrespective of the membership of the co-operatives.

2.4.2 Forward Integration

The cooperatives assist their members in movement of their produce from farm to the wholesale or to the retail markets. However, the operations, which are performed at the farm level, include plucking of fruits in semi-ripe condition followed by grading through experienced labourers. In case of chickoo, the grading is done solely based on the size of the fruit while in mango; the grading is done separately for different varieties based on the ripeness, size and other related aspects of the fruits. On completion of the grading, the fruits of varying sizes, viz., extra large, medium and small are packed in gunny bags and transported to the co-operative at farmers' risk. The ranges of activities, which cooperatives undertake to integrate forward, are described below:

2.4.3 Weighing/Grading/Packing

The cooperatives have attempted to make these operations as transparent as possible to win over the confidence of its membership. Some of the procedures followed by the cooperatives are:

Weighing and Quality Assessment. The process is important and has direct bearing on the price paid to the farmer and therefore, is carried out in the presence of the member or his representatives. As a procedure, 10 kilograms of chickoo are taken from the three lots (extra large, medium and small) and number of fruits is counted. For instance, 100 chickoo fruits in 10 kg are considered as the best 'jantri' in the local terminology and this size receives better price. An increase of every five chickoos (more than 100) in the sample of 10 Kg, the price gets reduced and may go down further as the number of fruits in this sample of 10 Kg goes up.

The jantri and the total weight of each grade are entered in a receipt by the cooperative personnel and a copy is handed over to the farmer concerned. Generally, jantri is fixed for a season, but might be revised within the season depending on price realisation in the terminal markets and quality of fruits received during the season. The information regarding price realised in the terminal markets is generally received within three days and is displayed on the notice board of the society to inform farmers regarding disbursement due to them.

Grading. In addition to farm level grading by the farmer, the cooperatives undertake second grading at their own level to grade chickoos into three categories such as Extra Large, Medium and Mixed size fruits after pooling all the produce received on a particular day. This is done to ensure uniformity before the produce is sent to Delhi and other markets. Amalsad and Gadat co-operatives are utilising grading equipment to undertake this operation. All other societies use experienced manpower for this purpose.

Packing. All the co-operatives have semi-automatic packing machines and 20 Kg. of fruits are packed in corrugated fibreboard boxes which carry the trademark of the co-operative concerned and grade of the fruits.

2.4.4 Transportation

The carefully packed fruits are transported to Azadpur (New Delhi) or wholesale markets located elsewhere with necessary care. In order to ensure timely delivery, cooperatives have accepted the practice of paying a special incentive of Rs.2000/- per truck for timely delivery in Delhi markets. Smaller co-operatives share the transport facilities to economise the cost. The cooperatives have also made attempts after 1998-99 to transport chickoo through railway wagons to further reduce the transportation cost and improve the efficacy of logistical

arrangements by preventing the chances of delay, non-availability of adequate transport capacity in peak season, fear of accident and wastage caused by jerks to a large extent. However, the alternative arrangements have its own problems like non-availability of railway wagons on time and possibility of theft when the wagons were not sealed properly. In spite of these problems, most of the secretaries of these co-operative societies felt that with this new and alternative arrangement, the profitability of the chickoo business has gone up and during peak season special trains from Amalsad to New Delhi are operated twice in a week.

2.4.5 Sales and Sales Coordination

All the co-operatives use brokers in New Delhi for trading chickoos. A smaller part of the produce is traded in Jaipur, Indore and Chandigarh markets. Surprisingly, none of these co-operatives have their own marketing establishment in New Delhi even though they are in the business for more than 50 years. The cooperatives generally tend to be independent in their activities in chickoo except for logistical arrangement. In case of other produce, varying level of coordination has been observed.

As all of them are also engaged in processing of mango into pulp and pickle (with the exception of 'Dhanuri' cooperative), Gadat cooperative (on behalf of federation) manages warehousing of mango pickle material. Similarly, the Gandevi Taluka Sangh offers all services related to paddy primary processing and marketing to member cooperatives. It seems that lack of economies of scale in their activities drives them towards coordination.

2.4.6 Pooling and Payment System

The payment to the members against the sale of produce is based on the average price received for the pool. All the arrivals in case of chickoo, banana and elephant foot are procured under single pool because there are not many distinct varieties of these crops in the command area of cooperatives. However, multiple pooling is resorted in case of Mango and Paddy due to existence of number of varieties and noticeable differences in their traits.

All the cooperatives in the group levy a uniform service charge of three per cent of the price realised by the members for all the commodities. Exception to this rule is deduction of Re.1/bag in case of paddy by some

cooperatives, viz., Amalsad, Gadat and Gandevi. The significant features of the payment system are indicated below:

i. Pooling system : Single (chickoo, banana and elephant fruit)
Multiple (mango, paddy)

ii. Service charges : 3% of the price realised with exception of Re.1/- bag for paddy

iii. Payment : Approx. 75% of the price within 1-3 days and final settlement in June-Aug.

The part payment (75-85%) against the produce is paid to the farmer within 1-3 days while the remaining is paid after finalising the pool account by 30th June every year. While making this final payment, the members' dues against the purchase of inputs or other goods/services are deducted. In addition, the associated selling agencies of these cooperatives on an average receive 4-5 percent commission on sales proceeds (Annex 1).

In order to encourage members to use certain inputs to improve productivity, Dhanuri co-operative has set an example in selling bio-fertilisers. The members using bio-fertilisers have to pay lesser service charge @ 2.5 per cent against payment of full charges for non-use of bio-fertilisers.

2.5 Provision of General Services

Apart from production and marketing related services, some of these co-operatives provide many other services such as consumer store, textiles, stationary, medical stores, flourmills, construction materials and cattle feed. The Amalsad co-operative provides maximum number of such services as compared to any other co-operative in the group (Table 2.5).

Table 2.5: Provision of Non-Business Services by the Cooperatives

Service	Cooperatives Offering the Service	
	Number.	Name(s)
Consumer stores	6	All sample cooperatives
Textiles	2	Amalsad, Gadat
Groundnut oil	1	Amalsad
Flour Mill	2	Amalsad,Gadat
Stationary	3	Amalsad, Gadat, Karel
Medical camps	1	Amalsad
Construction material	2	Amalsad, Gadat
Cattle Feed	3	Amalsad, Gadat, Gandevi

The consumer stores is the facility offered by all the cooperatives. The utility of such services need to be considered along with the extent of their utilisation. The analysis with regard to utilisation of services like consumer store, cattle-feed, flourmills reveal high utilisation (Table 2.6).

Table 2.6 : Use of General Services by Cooperative Membership

High (around 100%)	Consumer Stores, Flourmills, Textiles, and Cattle-feed
Moderate (around 50%)	Stationery,
Low (below 25%)	Medical, Construction Material etc.

The other services like textiles, stationery, and construction material are used relatively by fewer members. Apart from the services mentioned above, Ajarai Co-operative sells PVC Pipes and operates an agency for supplying LPG with utilisation by membership to the extent of 15% and 5 % respectively.

2.6 Membership Opinion Survey

In order to assess the utility of services offered by the cooperative and corresponding members satisfaction, an opinion survey was conducted through a random sample of 43 members representing five cooperatives (Table 2.1). The other characteristic of the sample is presented in Table 2.7.

Table 2.7: Sample Membership Profile

Membership type :	'A' grade (37), 'B' grade (6)
Years of membership :	<10 years (17), 10-20 years (10), 20-30 years (8)and >30 years (8).
Land holding (acres) :	No land (2), <3 (9), 3-6 (9), 6-9 (2), 9-12 (9), 15-18 (6) >18 (6)

Some of the members were cultivating more than one crop, but were considered as sample farmers for the most important crops. The sample was observed to be representative of ground realities. The cooperatives seem to have nearly 40 percent younger membership and substantial representation from farmers having varying size of landholdings.

As far as the pooling of the produces is concerned, nearly all members market their produce through cooperatives (Table 2.8).

Table 2.8 : Extent of Membership Availing Marketing Services by Co-operatives

Crops	Number of farmers			
	Crops Produced by Sample Respondents	Extent of Marketing through Coop.		
		Full	Partial*	None**
Chickoo	43	40	1	2
Mango	35	26	3	6
Paddy	25	24	0	1

* Part or **Full production sold through open market

The three chickoo growers selling partly or fully through open market expressed that their chickoos are higher grade and they are not likely to receive better prices commensurate with the quality of their produce through the cooperative and hence resorted to partial or full sale through open market.

In case of mango, the six growers from Dhanuri were selling in open market because Dhanuri cooperative does not deal in mangoes. However, few growers who resort to partial sales in the open market extended following reasoning for their action

a) They get better prices in the open market, or

b) Mango trees are leased out to pre-harvest contractors with a view to concentrate on the other crops with relatively higher workload.

A small number of members sold outside cooperatives for compelling reasons such as – avoiding recovery of dues by the cooperative, mangoes ripened even before the start of procurement by the cooperatives, busy in house construction and therefore entrusted the task to pre-harvest contractor, etc. In paddy only one member was supplying his produce to his friend who had a rice mill. The above analysis clearly suggests that the membership not only trust their cooperatives but also patronise by availing important services such as marketing.

2.6.1 Crop Production Services

The fruit and vegetable cooperatives have been providing a range of services to the members and the usage level differs from activity to activity. The services by their usage level can be categorised as under:

High (>90%)	: Fertilisers, Pesticides and Fruit Fly Control Project
Moderate (50-90%)	: Technical Seminars, Extension and Credit.
Low (<50%)	: Advance, Diesel, Tractor Hiring, Implements and Seeds

In terms of magnitude of importance, the services received the following average rank score (using rank order scale) from the respondents:

Very High (>9.0)	Fertilisers (9.09)
High (6.0-9.0)	Pesticides (7.19), Fruit Fly Control Project (6.20)
Moderate (3.0-6.0)	Technical Seminars (4.16), Credit (4.13), Extension (4.04)
Low (<3.0)	Advance (2.26), Tractor Hiring (2.19), Diesel (2.05), Implements (1.19), Seeds (1.14)

In addition to importance, which the members attached to these services, the satisfaction with regard to delivery of these services was measured on a 5-point Likert scale. The response was observed to be highly satisfactory in all the cases. One of the important concerns noticed during the analysis of open-ended responses in case of one of these co-operatives was about extending much higher level of credit facilities as compared to all other co-operatives. *The members of this cooperative wanted that the efforts have to be made to reduce the credit available to individual members considering the growing indiscipline among members in repaying the credit availed by them.*

Some of the members expressed a few grievances with regard to availability of tractors for tillage in time, supply of relevant literature, research material and seminars to increase the mango yields and improving the quality of fruit fly project. Some members suggested supply of more fertiliser variants, soil testing facilities, provision of more extension services by appointing agricultural graduates, pumps for spraying pesticides, supply of labourers, etc.

2.6.2 Marketing Services

The core function of these co-operatives is obviously the marketing of agricultural produce of their members. The analysis presented earlier in this section of the report suggests high patronage by membership in availing services like marketing. Further, some more in-depth probing was done to understand members' opinion and satisfaction with various

marketing sub-functions like weighing, grading, pricing, packing, transport and sales, etc. which are likely to generate confidence and trust amongst the membership and to establish stronger relationship with their cooperative. A two dimensional analysis covering importance and satisfaction levels of each sub-function was done to the help of survey data and is presented in Table 2.9.

Table 2.9: Importance and Satisfaction with Marketing Functions (Sub-function wise Analysis)

Sub-Function	Importance	Satisfaction Level
Grading	4.02	5.00
Weighing	3.74	4.98
Packing	2.88	5.00
Transport	2.74	4.83
Sales	2.76	4.33
Pricing	3.36	4.81

In terms of importance, grading and weighing seem to weigh relatively higher in the minds of membership as compared to other services like packing, transport and surprisingly sales. As far as the physical activities of weighing, grading and packing, the members were highly satisfied, but, in case of sales, pricing and transportation, the perceived satisfaction levels were marginally lower. A small section of members (7.1%) opined that their produce is of better quality than the best jantri offered by the co-operatives. They also perceived that they received lesser price compared to open market (Table 2.8).

In general, the satisfaction levels were in conformity with the importance attached by members to various marketing sub-functions with exception of sales activity wherein importance attached as well as satisfaction levels were also relatively low. Even the dissatisfaction was somewhat noticeable in case of sale function with only 72 per cent of responses in highly satisfied category. The dissatisfied members were critical regarding the manner in which the cooperatives are discharging their sales function. They were of the opinion that the co-operatives have not realised the need to have a closer look at the Delhi market than just depending upon the sales agencies. They were apprehensive that by extending an advance of a few lakhs of rupees to the co-operatives

these sales agencies at New Delhi are reaping higher benefits and the co-operatives are at the mercy of these agencies. Some members felt that since each co-operative has been dealing with the same set of sales agency over a period of time, they could not have any data for comparing the prices paid by other sales agencies. It was alleged by them that the same set of five to six sales agencies have been dominating the Delhi market right from the beginning and hence there is sufficient scope to believe that they have formed a cartel to manipulate the prices to be paid to the co-operatives.

It has become a regular feature of the general body meetings to compare the prices obtained by all the societies in this regard. Its members would normally take the management of any co-operative to task, in case a neighbouring co-operative achieves higher prices for its members' produce. There is a generally felt need to find out alternate markets to overcome the monopoly situation faced in Delhi market.

2.6.3 Satisfaction with Price Settlement Mechanism and Payment of Sales Proceeds

The sustainability of the cooperative marketing effort depends on the extent of satisfaction, which members will derive from the ability of the cooperative to facilitate the receipt of remunerative price from the market and marketing cost incurred. The levels of satisfaction of the members on important dimensions are presented in Table 2.10.

Table 2.10: Extent of Satisfaction with Price Settlement Mechanism

Parameter	Satisfaction Level (Av.Rank Score)
Fairness	4.69
Transparency	4.93
Timeliness	5.00
Relative price received*	4.83

** Price received in comparison to open market*

The above data indicate that most of the members felt very much satisfied about the fairness of the payment system. They pointed out that the passbook provided by the co-operatives furnishes all the details regarding payment dates, amount paid and the quantum and grade of the produce supplied. They also felt that the system has been

functioning without any scope for severe criticism. Computerisation of the accounting and payment system in Gujarati (Local language) has also enriched the members' satisfaction.

A small section of the members in the sample (3 out of 42) were not satisfied with the performance of cooperatives with regard to the price received. In the course of discussion with these members, the following points emerged:

- Pooling of produce is one of the limitations in receiving relatively better prices for better quality, as the payment system has no provision for price discrimination based on quality. These problems are likely to acquire significance as varietal and characteristic differences will drive sales in future in number of commodities.
- The perceived impression of lower price for better quality is nullified to some extent by 'other services' provided by the cooperatives in comparison to open markets. Further, the cooperative members also perceived that open markets are less reliable for following reasons:
    - There have been instances wherein under weighing was reported in open market. The modus operandi of the private traders in this regard was to measure one maund as 21 Kg instead of 20 Kg. Due to this in each maund farmers were losing one kg.
    - Traders in the Agricultural Produce Market Committee (APMC) charged a higher commission of eight or more per cent. Further, wide fluctuations were the order of the day in the open market.
    - Moreover, equal treatment was not meted out by the open market to the farmers. Big farmers whose produce was falling in the premium quality were given more importance in the open market and they duly received higher prices.
    - Further, there were complaints about the traders in the open market that payment was inordinately delayed and in some cases the traders left the village without paying the farmers.

On the contrary, co-operatives were entertaining all the members and payments were effected within a short period. In addition to these, many services provided to the members, stability of rates paid by the co-operatives and members' trust in the functioning of the co-operatives have also positively contributed to the success of the co-operatives.

2.7 Provision of Non-Business Services

Apart from the production and marketing services, these co-operatives have been providing varying types of non-business services such as consumer stores, textiles, medical stores, petrol, cattle-feed, veterinary services, stationary, building materials and medical clinics. However, all the cooperatives do not provide all the services with exception of consumer stores (Table 2.5). The extent of usage of these services also widely varied across services (Table 2.6).

2.7.1 Scope of Services – Rank Order Analysis

In order to gauge the importance members attach to these services rank order analysis was undertaken and the findings are presented below:

Very High (>9.0)	Consumer Stores (9.78)
High (6.0-9.0)	Textiles (7.37), Petrol (7.00),
Moderate (3.0-6.0)	Medical Stores (5.93), Animal Husbandry (5.20), Crackers (4.62), Cattle Feed (4.56), Stationery (3.68)
Low (<3.0)	Kites (2.75), Flour Mill (1.50), Building Materials (1.41)

The above average rank order analysis is based on ranking provided by the respondents to whom these services are accessible. However, in this regard, it will be appropriate to consider the following:

a) Firstly, the overall utility of the non-business service should be regularly monitored on two criteria, i.e., extent of usage and importance attached to the service or in other words cooperative should concentrate on providing services, which are perceived to be unique by the members. For example, the services like building materials, flour mills reflected high satisfaction by the users, but members availing the services were very few and therefore, cooperatives need to do some re-think in offering such services both from the point of views of utility and cost of delivering such services.

b) Secondly, these unique services not only are made available to the membership, but also need to be promoted. The concept of promoting its own services with a view to enhance its usage and improve the efficacy of its delivery seems to be absent in cooperatives. The members will utilise the services provided by

cooperatives only when they perceive its superiority compared to other sources where similar services are available. The success of consumer stores adequately proves such assumption. The benefit of this service as narrated by the members are:

- Purchase all day to day needs from these stores at a lesser rate than the open markets.
- Moreover, they could make these purchases even at credit basis, and need not pay the interest for the credit availed if the payment was made within three months of purchase. Most of the members were repaying the credit within a short time and it was told that there are very few defaulters in this regard.

Therefore, promoting usage of its services will go a long way in building long term relationship with the membership. The textiles, petrol, medical store, livestock related services like animal husbandry and cattle-feed were other important general services offered by the cooperatives.

2.7.2 Delivery of Services – Member Satisfaction

The satisfaction levels from these services were very high nearly approximating to 5.0 on 1-5 scale in all cases. Nevertheless, there were suggestions to improve some of the services. For instance, there were demands to keep the medical stores open for longer period and stocking various types of medicines, which are not available at present.

2.8 Governance System - Some Insights

During the course of this study, it was observed that in addition to the services offered, the members have been given very important roles in decision-making process in these cooperatives. Such governance system has increased the sense of belongingness of the members and they have started identifying their interest with the success of the co-operatives. Some of the relevant observations in this regard are detailed below:

2.8.1 Distinction by Membership Type

As already stated in sub-section 3.0 of this report, these cooperatives have grade "A" and grade "B" type membership. The members received differential treatment in terms of range of facilities extended and representation in the governing bodies within the cooperatives (Table 2.11).

Table 2.11 : Membership Type – Representation and Facilitation within Cooperatives

Particulars	Status of Representation and Facilitation for 'B' Grade Members					
	Amalsad	Dhanuri	Gadat	Gandevi	Ajarai	Karel
Representation in Board Grade B	Yes (2)	No	No	No	No	Yes (1)
Credit facilities Grade B	No	credit Less	No	No	Yes	No
Advances Grade B	advance	Yes Less	No	Yes	Yes	Yes

* *The grade 'A' members get all these facilities in all the cooperatives. In case of grade 'B' members 'Yes' indicates availability, 'No' indicates non-availability*

It is evident from the above table that grade 'B' members selectively receive representation in governing bodies and facilitation within various cooperatives. In other words all the cooperatives have grade 'B' members, but their policies with regard to representation and facilitation vary from cooperative to cooperative. In fact the largest cooperative Amalsad had more grade 'B' (nominal) members (4451) as compared to grade 'A' members (3997) as on June 1998. The Amalsad and Karel cooperatives have offered notional representation to grade 'B' members while other cooperatives offer only facilitation with exception of Gadat. Credit facilities to Grade B members (nominal members) are extended fully by Ajarai co-operative and partly by Dhanuri co-operative. The Gadat cooperative offers no representation and no facilitation to grade 'B' members.

Further, none of the cooperatives in this study is allowing voting right to Grade B members in the general body meeting. As far as representation of Grade B members in governing bodies is concerned, only Amalsad and Karel Co-operatives have provisions and that too a limited extent. A few co-operatives such as Amalsad entertain non-members just for one year. For subsequent years such non-members are required to become members to continue their transactions. However, no discrimination for any category of members or non-members was observed as far as prices payable for the produce were concerned. The whole concept of grade 'B' membership is oriented towards attracting potential members and also allows flexibility to

members to market their produce. At the same time, members who are more committed and supply their entire produce to the co-operatives are given more say in its functioning than the fringe players. The management is also obliged to first handle the production of its core members.

2.8.2 Membership Participation in Decision Making

The governance system has created ways and means to make the decision process more participatory in these cooperatives although the elections to the Governing Board are covertly fought on political party affiliations. The Governing Board in turn constitutes its own committees for decision-making. For instance, in case of Gandevi co-operative, there were four committees, namely, crop committee, staff committee, transport committee and consumer committee.

- Crop committee has 11 members (5 from the Governing Board and 6 others from General Body). This committee deals with all the services related to crop production like yield and extension.
- Staff and transport committees had five Governing Board members each.
- The consumer committee was entrusted with the responsibility of overseeing the supply of consumer goods through the general stores of the co-operative and it consisted of seven members from the Governing Board.

2.8.3 Horizontal and Vertical Integration

The horizontal and vertical integration is one of the important features of these cooperatives even though they sometime compete in the terminal markets to garner higher prices for their produce. This horizontal and vertical integration among these co-operatives operates through the Valsad Fruit and Vegetable Co-operatives Federation, Gandevi. Considering individually, the horizontal integration is operationalised by organising day-to-day meetings among the secretaries to achieve the following:

- assessment of the market in terms of demand, supply and prices,
- information exchange about their own activity to avoid surplus supplies in the same market, &
- Resource sharing to reduce cost likes sharing of railway rake to reduce transportation cost of chickoo for supply to New Delhi terminal market.

The federated structure also benefits them through vertical coordination to achieve economies of scale, not available to individual cooperative, to undertake processing activity. The vertical integration has been operationalised:

- through a common brand 'AMIDHARA' for marketing mango pulp, and
- By the decision of these cooperatives to pool the surplus mangoes to produce the intermediate product for pickles.

The recent initiatives by these cooperatives to work towards horizontal and vertical coordination are likely to positively impact the cooperative-market interface and improve their forward integration with markets. Simultaneously, improvement in forward integration is likely to improve volume and profitability of business to benefit its membership.

2.8.4 Managerial Issues

Although the governance system, as described above, has helped to resolve a number of problems in these cooperatives, some of the managerial challenges still evading satisfactory solution are:

2.8.4.1 Member Behaviour

The opportunistic behaviour by some of the members continues to pose problems for the cooperative, for example:

- some of the farmers supply unripe chickoo fruits to the cooperatives to receive higher prices in the beginning of the season.
- The incidence of member disloyalty seems to be higher in case of mangoes and negligible in chickoos. Some of the mango growers sell large part of their produce in the open market.

2.8.4.2 Managing Seasonal Peaks in Supply

Almost year after year, the cooperatives do face the problem of glut in supplies at least for 8-10 days, primarily due to pooling of larger quantities of fruits by its members than their production estimates. This leads to crisis many a times particularly with regard to logistics including transportation. Sometimes, decline in availability of labour due to festivals also creates problems of timely handling of perishable fruits.

2.8.4.3 Higher Cost of Borrowing Funds

These cooperatives also end up in paying higher interest rates on the borrowings from the district cooperative banks. It was suggested by some of the members that the policy of the State need to change to allow these cooperatives to directly borrow from NABARD.

2.9 Inferences

The six multi-purpose co-operatives covered in this study were mainly engaged in marketing of chickoo and mango. An earlier study has estimated that 29.10 and 65.70 per cent of mango and chickoo of this region are marketed through these co-operatives. These cooperatives also provide marketing services in other crops like paddy, banana, elephant foot, etc. to even meet the secondary marketing needs of their membership. The cooperative-member interface extends backwards to improve the production system of these crops and also extends forward to improve the members' income (Fig. 2.1).

2.9.1 Cooperative-Member Interface (Backward Integration)

In terms of backward integration, the cooperatives provide a range of services, which can be sub-categorised into:

- Delivery of inputs like fertilisers, pesticides, and cattle feed,
- facilitation through transfer of technical know-how, implementation of pest management projects on command area basis, animal husbandry prescriptions etc., and
- Delivery of services, which are important to members but are not related to their core business like running of consumer/ medical stores, supply of petrol, textiles and stationery.

By providing these services, the cooperatives attempt to improve the efficacy of the production system and also provide a range of non-business services to its membership. At the same time, the study findings suggest that some of the services offered by the cooperatives suffer from low rank in importance and low usage by the membership. It is necessary for the cooperatives to not only identify services in accordance with the needs of the members, but also offer these services in a manner, which maximises their usage and results in better allocation of available resources within the cooperatives.

The other, but very important component of backward integration is purchase of produce by the cooperative from its members. In this area, the cooperatives have attempted to maximise the transparency of the system resulting in a very high satisfaction amongst the members with regard to processes of transaction, which include grading, weighing, pricing, etc.

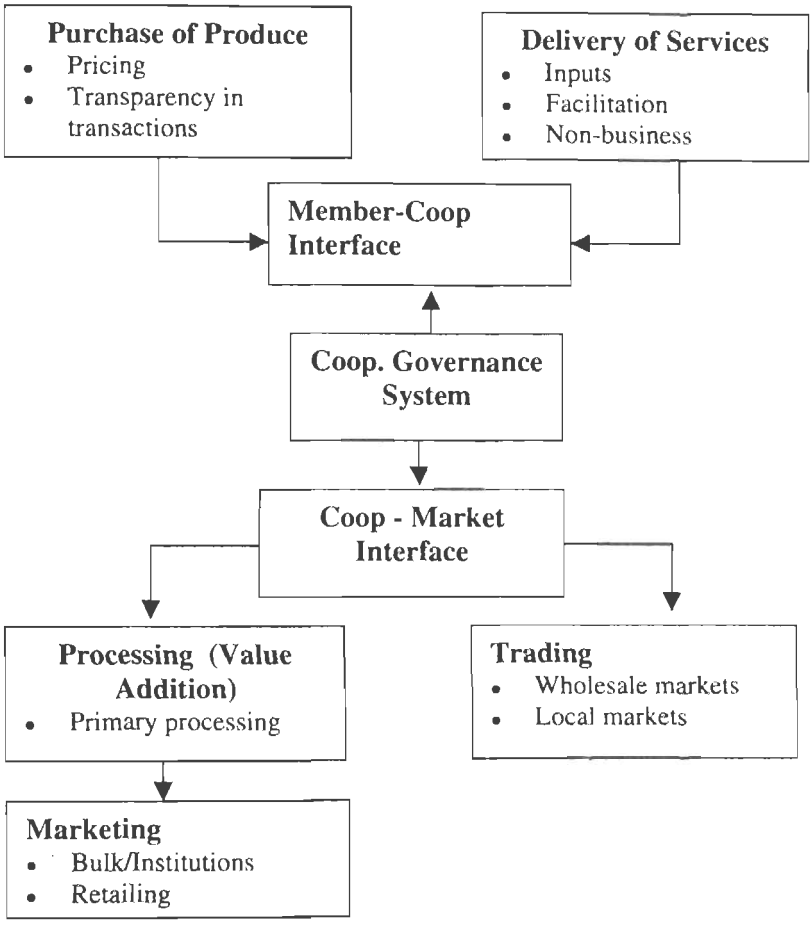

Fig. 2.1 : Member-Cooperative-Market Interface : An Outline

These backward linkages are further strengthened with the participatory governance system wherein the membership finds representation in various committees and gets a platform to convey the needs and grievances of the membership they represent. The study observes that baring a few exceptions, these cooperatives have been able to build strong relationship and trust with their membership.

2.9.2 Cooperative-Market Interface (Forward Integration)

As stated above, the cooperatives under study seem to be quite successful in building strong interface with their membership. However, this interface can only be sustained provided the cooperatives are able to continuously strengthen their interface with the markets particularly under growing competition from the private trade.

Currently, these cooperatives attempt to achieve cooperative marketing interfacing partly through horizontal integration and partly through vertical integration (Fig. 2.1). The horizontal integration is more of a coordination process involving combined assessment of ever-changing market situation, sharing of information to improve marketability of the produce of cluster cooperatives and resource sharing to contain or cut costs. The vertical integration is driven by the need to manage supply gluts and move up in the value chain through processing. Therefore, all the grades of mango from all the cooperatives are processed (mango pulp or intermediate product ready for making pickle) for when the prices are low while the processing is restricted to 2nd and 3rd grade when prices are high. These products are generally sold to bulk/institutional buyers with some portion diverted for retailing locally or to metros and big cities through their own outlets.

2.9.3 Member-Cooperative- Market Linkages

The member-cooperative-market linkage can best be described as three major initiatives of the cooperative governance system. Firstly, the backward linkages with the members are strengthened through the 'organising element' to support farm production at the level of individual members. Secondly, the cooperatives have horizontally integrated in an attempt to improve marketability of highly perishable fruit products. Thirdly, the purpose of vertical integration is to overcome the problems of unpredictable supply gluts and acquire desired economies of scale for the processing activity. Interestingly, such backward, horizontal and vertical integration have brought together eight cooperatives and more than 13,000 farmers under a federated structure to supply their entire produce to the co-operatives for trading and marketing. It can be observed that the process of backward and horizontal integration seems to have achieved higher level of perfection as compared to forward integration with markets. The study, though not very explicitly, suggests that farmer behaviour and loyalty towards the cooperative is dictated by the trade-off between the price realised for his produce and the nature and extent of services offered. Therefore, in order to sustain emerging competition, contain possible discontent in membership and to achieve growth, the cooperatives will have to find new ways and means to radically improve upon their marketing

capabilities and satisfy growing expectations of their membership through constant improvement in range and quality of services.

Annex 2.1: Activity Profile of F&V Cooperatives Including Commodity Trading

Name of the co-operative	Commodity	Season	Approx. Quantity handled (in metric ton)	Disposal arrangements	
				Trading / Processing	Marketing arrangements
Amalsad	Chickoo	Whole year	11,537	Trading	Sales agency at New Delhi
	Mango	May - June	227	Trading and Processing	Processing through Federation and Trading locally
	Paddy	Oct - Nov May-June	1800	Trading	Trading through Taluka Sangh
	Elephant Foot	No specific season	2	Trading	Local Traders
	Banana	June - Oct	0.8	Trading	Local Traders
Dhanuri	Chickoo	Nov - Feb	800	Trading	Sales agency at New Delhi
Gadat	Chickoo	Whole year	250	Trading	Sales agencies at New Delhi / Punjab
	Mango	May - June	1400	Trading and Processing	Processing through Federation, Trading at New Delhi, Saurashtra and locally
	Elephant foot	Oct - Nov	10	Trading	Local traders
	Banana	June - Feb	152	Trading	Local traders
	Paddy	May - June Oct - Dec	1600	Trading	Trading through Taluka Sangh
Gandevi	Chickoo	Oct - March	1735	Trading	Sales agency at New Delhi
	Mango	May - June	35	Trading and Processing	Processing through Federation and Trading locally
	Banana	Whole year	0.68	Trading	Local traders
	Paddy	May - June Oct - Nov	890	Trading	Trading through Taluka Sangh
Ajarai	Chickoo	Nov - May	2800	Trading	Sales agencies at New Delhi (95%) / Indore (5%)
	Mango	May - June	1000	Trading and Processing	Processing through Federation and Trading locally
	Paddy	May - June Oct - Nov	611	Trading	Trading through Taluka Sangh
Karel	Chickoo	Whole year	1464	Trading	Sales agency at New Delhi
	Mango	May - June	900	Trading and Processing	Processing through Federation and Trading locally
	Banana	Whole year	16	Trading	Local traders
	Paddy	May - June Sep - Oct	8648	Processing	Traders from Gujarat

CHAPTER 3

CONTRACT FARMING IN CHICORY - A CASE STUDY

3.0 Introduction

The marketing of chicory mixed coffee was started in India in 1950s by M/s. Brooke Bond India Limited (BBIL), which later merged with the Hindustan Lever Limited (HLL). The use of chicory as a beverage was popular in France as 'French Coffee'. It was only after the Second World War that French Coffee was introduced in India to provide economy and richer taste to coffee. However, its commercial success was dependent on sourcing chicory locally instead of imports.

Suitable climatic conditions and low irrigation requirements led BBIL to Jamnagar in 1956. In a drought-prone area where farmers have small holdings, BBIL demonstrated its commitment to the farmers by installing basic processing facilities for chicory, assuring 100 per cent buyback, providing free seeds which were to be imported and implementing best agricultural practices.

By 1960, BBIL had 130 acres of land belonging to 50 farmers under chicory cultivation on contract basis. The area under chicory cultivation has grown to 4,500 acres belonging to 1,700 farmers. The sincere effort of the farmers coupled with the use of appropriate technology have doubled the yield to 3 tonnes per acre (Datta, 1996). Gradually, chicory cultivation shifted away from Jamnagar due to recurring drought leading to frequent crop failures. At present, chicory cultivation is concentrated in the districts of Anand and Kheda (bifurcated from the composite district of Kheda) and to a lesser extent in Jamnagar and Mehsana districts of Gujarat, Mathura in Uttar Pradesh and Coimbatore in Tamil Nadu. According to reliable industry sources, noticeable change in area shift to Uttar Pradesh is taking place since the year 1999 and nearly half the area under chicory cultivation has been shifted by the year 2002. At the same time, it is recognised that due to limited area under its cultivation, it does not make any significant impact even on the agricultural economy of the concerned districts. Even with the on-going area shift, Gujarat continues to be a major processor and producer of chicory in the country. On the other hand, the consumption of chicory mixed coffee is prevalent in the Southern States, probably in order of Karnataka, Tamil Nadu, Andhra Pradesh and Kerala.

3.1 Chicory - Some Basic Facts

3.1.1 Chicory – Uses

Chicory as a product is unique in the sense that it had only one well-known use, i.e., an ingredient to coffee. Some coffee planters in India also call chicory as an 'adulterant' to coffee. In Belgium, chicory is sometimes even used as a drink without admixture of coffee. Sometime back, HLL had test marketed a new product, a mixture of tea, tapioca and chicory to penetrate low price segment of the beverage market, but not much is known about the success of this product.

Some attempts have also been made to discover its value as a pharmaceutical product. It is claimed that chicory not only refreshes and purifies the blood but also enables the blood to run quicker in the veins and arteries. Further, Inulin from chicory roots is marketed under the trade name Raftiline.ä This inulin is a mixture of glucose-terminated, b-2, 1 linked fructans that can be used as bulking agent on low calories bifidogenic dietary fibre. It is said that this is suitable for diabetics. This is supposed to improve the body and texture, mouth feel, increase gelling capacity and stabilize emulsions. In addition to the above, this insulin is being used in baked goods, beverages, desserts, etc. Though a few products such as instant chicory and chicory paste have been developed in France, its predominant use in India is as a complement to coffee.

3.1.2 Chicory – Cultivation and Processing

In Gujarat, chicory is sown during November and harvested in February/March. The crop duration varies between 120 to 135 days and is influenced by soil conditions, i.e., it matures early in lighter soils as compared to heavier soils. The tap root of chicory is harvested as soon as its leaves turn yellowish to avoid any loss in weight of the harvested produce. The incidence of pests and diseases is very negligible, but intensive use of labour was observed to be a requisite in chicory cultivation.

In the post-harvest stage, the wet roots of chicory are sliced into bits for proper drying and in turn for proper roasting. In order to obtain a better quality 'slicing thick and slow drying' is recommended. It is found that 3-4 tonnes of raw roots are required to produce 1 tonne of dry roots. The chicory varieties grown in Gujarat on an average yield 2.5 to 3 tonnes of dry roots per acre. The sun dried roots are roasted and then ground into powder. Some of the firms prefer the end product in granulated form to blend it with granulated coffee.

Most of the chicory is produced and processed in Gujarat primarily in Jamnagar, Mehsana and Anand, but, the processing units are located in Tamil Nadu, Andhra Pradesh, Karnataka and Kerala. These processing units obtained their requirements of chicory roots from Gujarat.

3.1.3 Chicory - Market Size and Structure

The old estimates suggest that the world consumption of chicory powder is anywhere between 1.1 to 1.2 lakh tonnes with France and India accounting for major consumption. The historical data suggest that quantity of the chicory roots used for preparation of chicory powder estimated to vary between 34 to 35 thousand tonnes per year (100 kg of dry chicory roots yield about 70 kg of chicory powder) during 1980s. Since then the demand for chicory has shown a continuously declining trend. According to industry estimate obtained during the course of the study, the requirement of the industry in terms of dry chicory roots further fell to nearly 18-20,000 MT in 1990s to around 12,000 MT in 2001. It may be mentioned that the demand/consumption of chicory is a matter of habit for a segment of coffee drinking population while in the other segment its consumption depends on the prices of coffee. The current phase of low demand is primarily driven by the steep decline in prices of coffee after 1998 and therefore its demand for blending in coffee is on the decline, at least temporarily.

3.1.4 Chicory – Consumption Dimensions

It is stated that about 80 to 85 per cent of the coffee consumed in India contains varying proportion of chicory ranging from 30 per cent upward. The ratio in the end product can reach as high as 50:50 and yet it is sold as coffee. Thus, chicory being a product with limited usage and nearly static demand generates its own market dynamics. As against its limited usage, its main advantage is in terms of its relatively low price as compared to coffee. Therefore, the mixture of chicory and coffee allows the coffee manufacturers and retailers to keep the prices of coffee within affordable range of a large number of consumers. This phenomenon was observed in the market place when prices of coffee ruled high during the period 1995-97. This is probably the most important reason for many private firms and Multinational Companies (MNCs) to take keen interest in the cultivation of chicory. The alternate view suggests that chicory has harmed the consumption of coffee when used as an adulterant in coffee.

The limited usages of chicory have also influenced the linkages between the chicory producers and manufacturers or retailers of coffee. As already stated its cultivation in India started on contract basis for two reasons:

- Lack of large open market, and
- Lack of feasibility of production of seeds in India.

The situation has remained unchanged with total demand continuing to be shared between the manufacturers of coffee products and retailers (popularly known as roaster- grinders) of coffee. Secondly, the attempts to produce chicory seeds in India have more or less failed. These two reasons have compelled the chicory growers to remain linked to the buyers through a contract. In spite of prevalence of contract farming, the situations of supply surplus are more common than the situations of supply deficits. In other words, contract farming has not been able to prevent yearly variations in supplies particularly supply surpluses which in turn impact yearly fluctuations in its area under cultivation, productivity and market price. In fact, many times chicory traders have resorted to manipulation of supplies to their advantage through supply of excess chicory seeds.

The circumstances explained above make contract farming of chicory a challenging task for the farmers, intermediary traders, chicory processors and coffee manufacturers. Therefore, the objective of this case study was to understand the dynamics of contract farming in a situation wherein possibilities of exploitation of farmers are high due to specific usage and limited demand of the product.

3.2 Methodology

A preliminary enquiry in the form of an 'exploratory survey' was conducted during June 1998 through persons associated with chicory cultivation, processing or marketing and were knowledgeable in their respective areas of expertise. The personnel covered included farmers, traders, processors, co-operators and officials of the Directorate of Horticulture and the National Seeds Corporation (Regional Office, Ahmedabad). Based on this preliminary research, the framework for the detailed study was prepared. The field research for the study was mainly conducted during the months of February 1999 and March 1999 (close to harvest of chicory crop) and continued afterwards till the writing of this report to fill information gaps and obtain update of events in the industry.

3.2.1 Respondents

During the conduct of exploratory survey, it was felt that obtaining relevant information from the trade and industry (chicory and coffee manufactures) is going to be difficult while responses from farmers will not pose much of a problem. Accordingly, a structured questionnaire was prepared for 'farmers survey' while for the 'trade survey', personnel associated with the trade and industry were interviewed with the help of a checklist.

The respondent contacted for the 'trade survey' included owners of chicory processing firms (2), field representative of chicory and coffee firms (6), representatives of chicory cooperatives (3) and private traders (3). The 'farmers survey' was conducted with 57 farmers representing any one of the following categories or sub-categories.

Table 3.1: Farmers Survey – Sample Spread

Category	Sub-category	No. of Respondents
Contract farmers	HLL	20
	Local processor	17
	Sub-total	**37**
Non-contract farmers	Past experience in contract, now selling freely	6
	Past experience in cooperative, now selling freely	5
	Past experience in contract, but now diversified away from chicory	5
	No past or present experience	5
	Sub-total	**21**
	Total	**58**

The local processor-wise sample spread of farmers was – Vimsons, Anand (10); Jamnagar Chicory Industry (3); Chicory Processors, Shedpur (2) and KK Chicory, Jamnagar (2).

The scope of enquiry during field research remain focused on the linkages between the farmers and the chicory processors or coffee manufactures with particular emphasis on areas of conflict in execution of production contract and how these conflicts are resolved to the satisfaction of both the parties.

3.3 Chicory Market Setting

Chicory is traded in the form of dried roots which are obtained after slicing and sun drying the fresh chicory roots or chicory powder obtained after roasting and grinding the sun dried roots. Lately, it is also being produced in granulated form for blending with granulated coffee. The trade and marketing channels in chicory are still evolving. Our study noticed a few marketing channel typologies which have evolved over a period of time as illustrated in Fig. 3.1.

In **Channel 1**, farmers enter into contract with HLL for the supply of a fixed quantity of dried roots of chicory. The dried chicory roots are passed on to the chicory processors by the HLL for roasting and grinding. These firms in turn process the chicory roots into powder on job work basis and supply to HLL. Further, the HLL produces chicory blended coffee and passes on it to its distribution chain consisting of distributor/stockist and retailers of coffee.

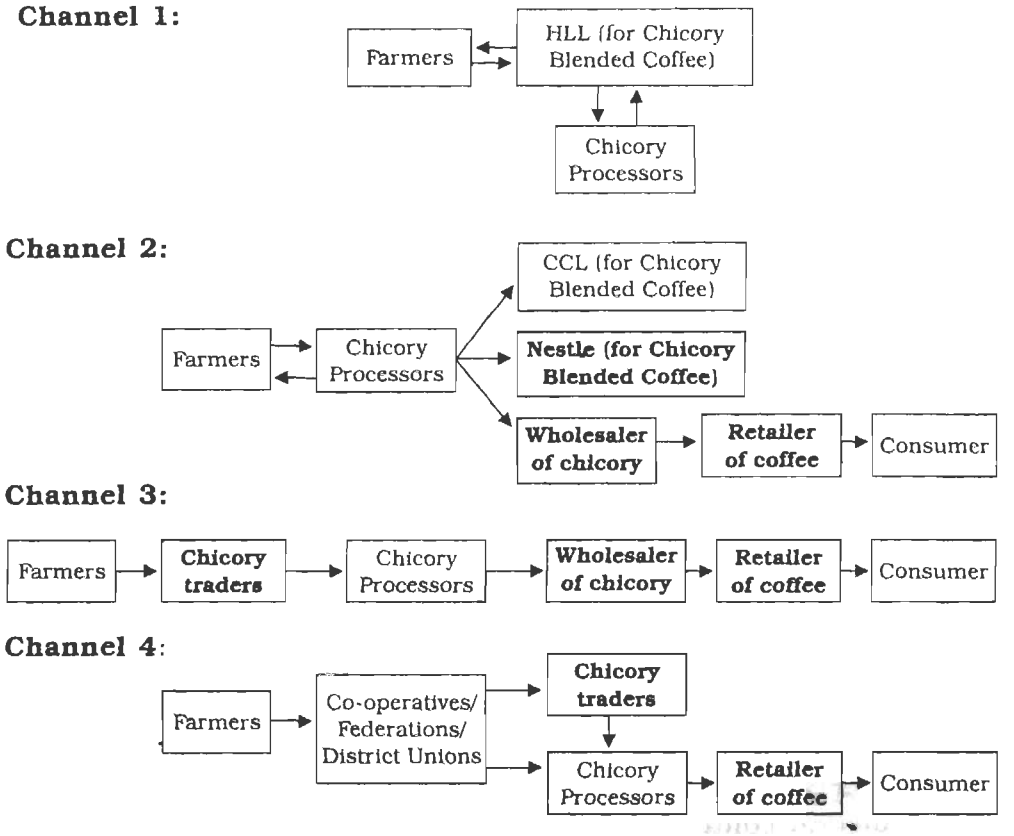

Fig. 3.1 : Alternative Marketing Channels in Existence in Chicory Trade

In **Channel 2**, farmers enter into contract with the local processors. These processors in turn enter into supply contract with coffee manufacturers, viz., Nestle India or Consolidated Coffee Limited (CCL), a subsidiary of Tata Tea or to the wholesalers of regional brands of coffee located in Southern India. The chicory procured by CCL or Nestle India is for internal consumption to produce chicory blended coffee. The wholesale traders of chicory sell their produce to 'Roaster-Grinders' who in turn retail freshly ground chicory blended coffee to consumers.

In **Channel 3** can be described as open market channel with no involvement in contract farming. The private traders or their agents purchase dry/fresh chicory roots from the farmers and sell them to chicory processors. Sometimes, the processors themselves purchase roots from the farmers through their agents. The channel is dominantly used by wholesale traders of chicory sell their produce to 'Roaster-Grinders' who in turn retail freshly ground chicory blended coffee to consumers.

Channel 4 is managed by various types of cooperatives, viz., Chicory Growers' Co-operatives or Purchase and Sales Unions (district/taluka levels) or District Chicory Producers' Co-operative Federation. The farmers association with the cooperatives was observed to be on voluntary basis and to a lesser extent through contract farming. In the absence of own chicory processing capacities, the cooperatives had little leverage in bargaining on behalf of the growers. Hence, they were also selling their produce to chicory traders or processors.

3.4 The Contractual Framework

The linkages between the producer and the buyer revolve around the document which specifies the terms and conditions of the contract and is signed by both the parties. The current study limited itself to identifying the problem areas and their short and long-term consequences on producer-buyer relationships rather than on legalities of honouring or dishonouring the contract.

In this context, the production contracts of three major procurement channels were evaluated on eight important dimensions relating to production, facilitation and purchase of chicory. A comparative information on these dimensions is presented in Table 3.2.

The comparison reveals that the cooperative channel represented by Kheda District Procurement and Sales Union (DPSU), Nadiad offered least attractive terms, but at the same time offered maximum flexibility

in terms of sale of produce to the union. The local processors were offering relatively better price terms and facilitation in post-harvest operations like transport, unloading etc. However, their contract framework left many terms unspecified to make the contract more flexible.

Table 3.2: Contract Farming Framework : A Comparison Across Agencies

Sl. No.	Particulars	HLL	DPSU Nadiad	Local Processors
I	**Seed supply**			
	Quantity	700 g / acre	700 g / acre	700 g / acre
	Price charged	Free of cost	Rs.1250/Kg	Free of cost
II	**Post-Harvest**			
	Drying/Grading	Farmer	n.a.	n.a.
	Packing/Loading	Farmer	Farmer	Farmer (Only loading)
	Transport/Unloading	Farmer	Farmer (Except Vimsons)	Firm
	Weighing	Firm	Farmer	Farmer
IV	**Facilitation**			
	Supply of bags	40 bags of 51 Kg net/acre at harvest	None	Bags of 61 Kg net in case of dry roots
V	**Farmers' Chicory Supply Commitments**	Entire produce (dried roots)	Entire produce (wet roots)	Entire produce (wet roots)
	Minimum Limit	2000 kg/acre	260 Kg*	Not specified
VI	**Purchase Price for Chicory roots**	Rs.4500/MT (dried, cleaned and graded)	Rs.1000/MT (cleaned)	Rs.23.75/20 kg (cleaned)
VII	**Penal Provisions for Non-supply**	Not specified	Rs.1250/kg for seed + 18% of seed price + price loss incurred	Cost of seeds Rs.540/ acre for seed + market price loss
VIII	**Payment Modalities**			
	Mode of payment	Cheque /MT	Not Specified	Not specified
	Period of payment	Within 25 days after delivery & acceptance of produce	Not specified	Not specified

* *In case of sale of produce to some other party.*

The HLL contract was observed to be relatively more specific in its description of various terms and conditions, but offered hardly any facilitation during production and post harvest phase. The firm lays down relatively more stringent conditions and quality norms for acceptance of the produce from the farmers. The HLL does not entertain any claim of loss incurred by the cultivator due to natural calamities, failure of seeds to germinate and for any other reason. The contracts of other agencies are silent on this aspect.

The standard norms framed by various agencies engaged in chicory purchases do not reflect the extent to which they are operationalised at field level. The field research conducted as part of this study primarily aimed at understanding this through expert opinion, trade and farmer survey in addition to overall functioning of the chicory/coffee industry.

3.5 Chicory Cultivation within Contractual Framework

The chicory contract farming can best be described as a type of 'production contract'. However, its market dynamics which are characterized by limited and captive demand have a strong influence on the terms and condition of the contract and its operationalisation on the ground. Some of the dimensions of chicory cultivation which are influenced by its market dynamics are detailed below :

3.5.1 Seed Procurement

The chicory seed used to be imported into India in 1960s and 1970s by private traders and firms engaged in its contract farming. It is understood that the malpractices like adulteration, supply of old seeds and charging higher prices by the private trade, were common features of chicory seed marketing. In view of the numerous complaints, Gujarat Cooperative Marketing Federation (GUJCOMASOL) got involved in importing chicory seeds from Holland, Belgium and France and distributed them to the farmers through their local co-operative societies. During early 80s Himachal Pradesh Agricultural University was able to produce chicory seeds indigenously. Subsequently, the National Seeds Corporation (NSC) was entrusted with the responsibility of producing and distributing the chicory seeds. The NSC for reasons best known to them could not sustain indigenous production and resumed its imports. At the time of this study, the NSC was importing most of the seeds after obtaining orders and advance of Rs.500/kg from interested parties. The process of inviting interest is initiated in February-March and seeds are delivered by September-October to be

in time for sowing in November. Currently, the import of chicory seed has been placed under Open General License (OGL) and major importers include Hindustan Lever (for its own distribution), NSC and 3-4 private traders based in Anand and Jamnagar in Gujarat.

3.5.2 Seed Distribution

It was observed during this study that Jamnagar was the most preferred location of HLL for contract farming of chicory followed by Kheda. Therefore, the area under cultivation and quantum of seed distribution in Kheda seemed to be dependent on extent of cultivation in Jamnagar in a particular season. Further, the quantum of seed distribution to contract farmers of HLL is decided after village level meetings are conducted between the farmers in contract with HLL and representative of the firm. It was noticed that the farmers have developed confidence in HLL local representative who has been associated with them for over 25 years. This representative in turn have agents in most of the villages in which HLL is operating.

Other local processors' agents also visit their contract farmers and collect seed demand and sign contracts with the interested farmers. This is done after these agents receive communication from their processors about the price and the quantum of chicory roots that may be needed during the ensuing season. It was observed that most of the agents were well known figures in their respective areas. For instance, one of them was the President (Sarpanch) of the Village Panchayat and another was Chairman of Co-operative Milk Society. Probably this factor has helped these agents to rope in as many farmers as necessary for their processing firms.

3.5.3 Seed Germination Failure

The seed germination failure can occur in case of chicory due to poor quality or due to occurrence of rain within 2-3 days of sowing. In either case sowing has to be done. The contracting firms generally inspect the field to assess the damage before agreeing to supply the seed again. The study suggests that in general the contracting firms are not penalising the farmers for genuine failure in seed germination. Only those farmers who do not inform such failures to the firm within a reasonable time and deliver less than the stipulated quantity of chicory roots face penal action. At the same time, the firms ensure that their interests are also safeguarded by inspection of the field. It was observed that such actions on the part of the firm help in building mutual trust over time. In order to avoid such failures, some of the firms (M/s Vimsons chicory) conduct germination test before seeds are supplied to the farmers.

3.5.4 Crop Husbandry and Extension

Chicory has a long tap root which penetrates deep into the soil up to 40cm, therefore field preparation requires deep ploughing and application of farm yard manure. The crop requires high care immediately after sowing to achieve good establishment of plants. Some of the important crop husbandry practices include thinning at fourth leaf stage, weeding at desired intervals, removal of bolted chicory plants, irrigation once in 10-15 days etc., to achieve better productivity and quality of roots. The incidence of pest and disease is negligible. The harvesting has to be carefully done to minimise damage to the roots and for this purpose, farmers generally irrigate the crop 4-5 days before harvesting. Given its simple crop husbandry practices, the contracting firms have neglected extension services even in areas where it is needed, e.g., post harvest management.

3.5.5 Post Harvest and Quality

The post-harvest operations which are generally carried out after harvesting in April involve cutting the leaves, cleaning the roots, cutting them into pieces, drying, grading and packing. However, during the year of study, i.e., 1999, the harvesting was delayed by about 15 days to allow the roots to gather weight since the yields were not up to the expected levels. Most of the farmers reported that harvesting is carried out free of cost by 'Bharvad' community people who migrate to these regions in search of fodder for their cattle. These people take the leaves free of cost in lieu of their labour. However, the farmers have to employ additional labour for cleaning the roots. The HLL farmers need to cut, sun dry and grade the root slices according to the size and pack them in 50 kg. gunny bags. The firm supplies a minimum of 40 bags/acre of chicory for packing.

The other contracting firms generally accept wet roots and therefore the only quality criteria used is the cleanness of roots. In case the roots are smeared with mud, deductions ranging from 100-200 kg/tractor trolley load of 5000-6000 kg are made. The HLL quality norms are relatively more stringent and applied rigorously as it buys chicory only as dry roots. In some cases when the moisture content is above permissible limits, the produce is returned to the farmer for further drying. This has led to better discipline and most of the farmers supply properly dried roots. In case of marginal deviations in moisture content from desirable limit, the HLL agent reduces 100 to 200 kg in the total weight considering the past record of the farmer.

The processors continue to standardise the procedures for collection of produce and inspection of quality. The HLL procedure is based on a sample check of five bags for moisture content and weight to arrive at the total weight of the lot. On the other hand, M/s. Vimsons who also buy fresh chicory roots were facing complaints that during the peak season, the farmers' produce has to wait for 2-3 days in the factory before delivery. This results in weight loss and in turn loss of revenue to the farmers. In order to overcome this problem, M/s Vimsons opened up regional root collection-cum-cutting centres in a few selected villages.

3.6 Farmers Survey

The findings of the farmers survey have been detailed to identify problem areas in the contract between the farmers and the trade (including processors and coffee manufacturers), nature of conflicts and the outcome of these differences on long term relationships between the two parties. The major findings of this survey involving 58 farmers are detailed below along with a brief profile of farmers included in the survey.

3.6.1 Farmers Profile

The farmers engaged in contract cultivation of chicory were generally owning between 3 to 6 acres of land with most of it under chicory cultivation. On the other hand, non-contract farmers were not committing their total owned land to chicory cultivation (Table 3.3).

Table 3.3: Landholding and Land Use Pattern of Chicory Farmers

Land size class (in bighas)	Number of Contract farmers		Number of Non-contract farmers*	
	Land under chicory	Total land owned	Land under chicory	Total land owned**
Upto 5.0	23	18	15	6
5.0 to 10.0	8	9	4	9
10.0 to 20.0	6	1	2	3
20.0 to 40.0	0	7	0	2
>40.0	0	2	0	0
Total	37	37	21	20

* Figures also include farmers who have left chicory cultivation. 1 bigha = 0.6 acre
** One farmer was cultivating chicory on lease land. He was not owning any land

It seems that the contract farmers are forced to cultivate chicory on the same piece of land without any break to maintain good relationships with the contract firm. Most of these farmers admitted that they do

not have sufficient land to rotate the crops and with the result, the fertility of their land is on decline (Table 4). On the other hand, non-contract farmers were not cultivating chicory on the same piece of land continuously to overcome problems of declining soil fertility and in turn lower crop productivity. Thus, most of them were aware of the need to retain soil fertility through crop rotation. They contended that since they do not have any contractual obligations, they could leave chicory cultivation any time and come back to it when they desire.

3.6.2 Contract Farming - Sustainability of Relationship

The sustainability of the relationship between various types of buyers and sellers as reflected by the years of their association is presented in Table 3.4.

Table 3.4: Period of Experience in Chicory Cultivation

Number of years experience	No. of contract farmers by years of their association with the present firms	No. of non-contract farmers by years of their association with the present buyers
Up to 5 years	9	9
6 to10 years	8	1
11 to 20 years	13	6
> 20 years	7	0
Total	37	16*

* *Five farmers have left chicory cultivation*

As evident from the data, the overall association seems to be relatively stronger in case of contract farmers as compared to non-contract farmers. Nearly 54 per cent of the contract farmers have association of 11 years or more with their respective buyers as compared to only 37 per cent in case of non-contract farmers. This is partly explained by the practice followed by HLL which discontinues the contract in case farmers fail to grow chicory in any particular year. It was observed that some of the farmers even pass on their own quota of chicory seed to their relatives to honour their yearly contract with HLL. The other processors try to enforce similar practice as of HLL, but were observed to be relatively more flexible in allowing farmers to come to back into their fold. The practice of shifting from one firm to another was observed to be common. Even amongst the non-contracting farmers in our sample, nearly 2/3rd of farmers were involved in contract farming

in the past. However, their current involvement with the private trade was purely on economic considerations. These farmers were even switching away from chicory in situations of adverse projected price scenario. Given the mixed picture of sustainability of contract farming in chicory, further attempts were made to understand the parameters which govern this relationship between the buyers and sellers in case of chicory.

The HLL has been maintaining this relationship for more than 25 years through their sole agent who in turn has sub-agents in most of the villages where HLL operated. Similarly, another private processor M/s. Vimsons Chicory, Gamdi has agents in 7 village clusters in the chicory belt with each agent covering nearly 200-300 acres. These agents extend facilitation to farmers in getting production contracts signed, crop inspection and organising transportation of chicory roots to the factory. The other processors operate on the pattern of M/s. Vimsons Chicory with additional responsibility given to their agents to ensure cleaning, cutting and drying of chicory roots before despatching it to the processing factory. These agents are carefully chosen and in most of the cases, these persons are well known in their respective areas and also hold important positions like Sarpanch or a chairman of village level milk cooperative. This helps these agents to rope in as many farmers as necessary for their firms and other buyers. These agents being local are also available to the chicory farmers to facilitate procurement and resolve their problem, if any. In a nutshell, the relationship between the firms and the farmers seems to revolve around three parameters:

1. Credibility of the agent,
2. Open access to the firm through agents to communicate and resolve problems, if any, and
3. Extent of facilitation by the agent.

3.6.3 Delivery of Extension Services and Crop Inspection

It was observed during the study that all the crop husbandry operations are carried out by the farmers without any service from the firms. Most of the farmers contacted seem to have gained substantial experience in chicory cultivation, but they have not been able to mechanise its cultivation in view of the delicate nature of chicory seeds and after care it requires in the initial stages of crop growth. The farmers were of the opinion that there was no need for the firms to provide any guidance to them. During the survey it was observed that only one farmer has sought technical opinion from the firm for controlling weeds immediately after sowing.

The other aspect of 'field inspection' of chicory crop showed no pattern. Around 46% (17/37) of the farmers informed that their crops have been inspected. The extent of crop inspection was higher in case of local processors (60%) as compared to HLL (30%). Even in terms of number of inspections during the crop season, HLL farmers were only inspected once while it varied between 2-3 times in case of local processors.

The differences can be partly explained on the basis of longer associations of HLL with its farmers and existence of trust between them. On the other hand, the operations of local processors are concentrated in a fewer villages and are highly agent dependent. The agents are paid commission in accordance with the amount of chicory supplied from their respective areas. Therefore, these agents inspect the crop regularly to estimate the expected crop yield and also prevent their farmers from selling the produce in the open market.

3.6.4 Pricing and Terms of Payment

The major provisions of the contract signed between the firm and the farmer include – quantity, quality and price with **price** being the most sensitive component of the contract. The criticality of the price can be judged by the fact that Narsanda Chicory Growers Cooperative was formed as a result of price disputes between chicory growers and HLL which will emanate due to considerable price differential between the spot market and contracted price.

During the year 1998-99 when a significant part of the fieldwork for the study was conducted, the HLL contract price was around Rs.100/ 20 kg of dry chicory roots while it was Rs.23.75/20kg of wet chicory. Considering the conversion ratio from wet to dry chicory roots to around 25 per cent, the price offered by processors on comparable basis works out to Rs.95/20kg of dry chicory. The enquiries with the representatives of various firms revealed that even if the open market prices fall, these firms pay the prices as per the terms of the contract. These representatives also observed that despite substantial fluctuations in prices in the open market (both upward and downward) majority of the farmers keep their supply commitments with the firms. Nevertheless, they admitted that in a few instances farmers vary the quantum of supply to them depending upon the open market prices. Nearly 57 per cent of the contract farmers (21 contract farmers - 4 of HLL and 17 of other firms) expressed that they supplied the entire produce to the firms when the open market prices are lower. However, the remaining 43 percent (16 HLL farmers) informed that they supplied

only the stipulated minimum produce to the HLL. Some of the agents observed that in the past, when the open market prices went down drastically, some of the farmers have acquired the chicory roots from non-contract farmers and supplied as their own produce to gain monetary advantage. Therefore, irrespective of upward or downward trend of open market prices, HLL and some other processors strictly adhere to the terms of contract to avoid dumping of produce by the farmers. The farmers are free to dispose their surplus produce in the open market.

Similarly, even when the prices of chicory roots are higher in the open market, the firms generally pay the contracted price only. About 60 percent of the contract farmers associated with HLL and other firms informed that they used to receive some price compensation in case of market price being much higher than the contract price. Normally they receive the original contract price on supply of produce and receive additional compensation at a later date. During the chicory season in the year 1999-00, which coincided with our study, the expected yield was reported to be very low. Consequently, all the firms raised the price payable considerably. The agents of various firms called farmers meeting to announce the hike, but many of our sample farmers were not aware of the hike. Some of the farmers doubted that the agents might retain part of the benefit in case of enhanced payment by the firms.

3.6.5 Terms of Payment

The payment within a short period can be considered as one of the positive dimensions of the contract farming in chicory (Table 3.5).

Table 3.5: Time Schedule for Payment of Produce

Period	Number of farmers	
	HLL	Others
Within 10 days	2	13
Within a month	15	4
More than a month	3	0
Total	20	17

It is evident from the data that farmers associated with HLL generally receive payment within a month as against within 10 days from other processors. The farmers also seem to appreciate the facility of receiving

payment through multiple instruments such as demand draft, mail transfer and cheque from HLL which also eliminate possibilities of intermediaries siphoning off even a fraction of the price paid to the farmers. On the other hand, most of the farmers (70%) associated with other processors received their sale produce in cash.

3.6.6 Penal Provisions in Contract

The penal provisions of the contract are primarily with reference to quantity, quality and price. Our enquiries led to highly varying response, but with regard to the **quantum of delivery**, the following limits seem to operate for every 700gm seeds supplied to the farmers.

Buyer	Normal	Maximum
HLL	2000kg*	2250kg
Other Processors	8000kg**	Entire produce

* *Dried and cut roots* ** *Washed and wet roots*

All the processors impose penalty for short supply, but a small section of farmers (15%) reported absence of such provisions. In case of short supply-

- The HLL pays @ 90 per cent of the contracted price for the produce actually delivered. In case of recurrence of short supplies, the production contract is discontinued.
- Some of the processors recover the cost of the seed in proportion to short fall in supply of chicory roots.

Some of the farmers reported that in cases of non-supply of the produce, the entire cost of the seed is recovered at a rate which is much higher than the market rate. As far as **quality** is concerned, the firms involved undertake following recourse:

- In case of marginal deviation in moisture level, the agent might deduct 100-200kg in the total weight considering the past record of the farmer. However, in cases where moisture content is much above permissible levels, the produce is returned to the farmer for further drying leading to farmer incurring additional costs on labour and transportation. In order to trace the supplier and avoid cheating, the HLL makes specific identification marks on the gunny bags supplied to the farmers.

- As the other processors buy wet chicory and therefore make deductions of 100-200kg/tractor load of 5000-6000 kg.
- One of the processors has developed a transparent process wherein mud is separated from chicory roots after washing and deductions for the mud weight are made accordingly.

3.6.7 Farmers' Awareness of Contract Details

It was surprising that most of the farmers did not have much idea about the terms and conditions of the contract they have signed with the HLL or other processors. The responses received during our survey clearly brought out that the contract document was silent on important issues like arbitration, renewal and termination. Most of the farmers informed that the contracts are primarily signed based on the confidence they have on the agents of the firms.

During our fieldwork only 12 farmers (32%) mainly associated with HLL admitted that they are in the possession of the contract document while another 14 percent informed that they have misplaced the document. The remaining 54 per cent of the farmers mainly associated with private processors informed that their contract document is with the agent. The ignorance of the terms and condition on the part of the farmers is due to various reasons. Some of them include:

- In case of HLL, the language of the contract document is English.
- In case of processors, the agents prefer to retain the copy of the contract with themselves.
- The farmers seem to rely more on relationship (trust) with the agent rather than the terms and conditions spelled in the contract document.

3.6.8 Farmers Satisfaction with Contract Farming

The farmers' satisfaction with chicory contract farming was measured on a five-point semantic differential scale. Amongst 37 sample farmers engaged in contract farming nearly 70 per cent were highly satisfied with another 16 per cent stating that they were satisfied. On the other hand, only 38 per cent non-contract farmers gave similar impressions (highly satisfied/satisfied) even though they are no more engaged in contract farming (Table 3.6).

Table 3.6: Farmers Opinion Survey – Satisfaction with Contract Farming

Impressions	Number of farmers	
	Under contract	Non contract
Very much satisfactory	26	3
Satisfactory	6	5
Neither satisfactory nor unsatisfactory	1	0
Unsatisfactory	0	12
Very much unsatisfactory	4	1
Total	37	21

The contract farmers who espoused 'satisfaction' cited the following reasons for their response:

(a) payment by the firms within a short period of time and full amount is paid at once,

(b) less problems with the firms,

(c) seeds are supplied free of cost, and

(d) prices of produce were never reduced even if open market rates decline.

The farmers who termed contract farming 'unsatisfactory' extended varied reasons which can be categorised as 'relating to the firm' and 'with chicory cultivation itself'. The problems relating with the firm include - fixed amount of seed supplied per acre by the firms, alleged supply of inferior quality of seed by the firms, transport to be borne by the farmers, imposition of penalties for moisture content and soiled roots and finally the rates offered by the firms do not reflect the real prices. The sole problem relating to the 'chicory cultivation' is of high labour requirement for drying and grading the roots.

The majority of farmers (62%) in non-contract category rated their impressions as 'unsatisfactory' with regard to contract farming. Given the mixed response of the non-contract farmers as 'satisfactory' as well as 'unsatisfactory', further enquiry and analysis was done to understand the reasons for their shifting away from chicory contract farming. The responses were multiple and varied as presented in Table 3.7.

Table 3.7: Reasons for Shifting from Contract Farming in Chicory

Reasons for shifting	Number of responses (%)*
Lower price offered by firms	8 (38.1)
More labour in dry chicory supply	4 (19.0)
Absence of Cooperative	3 (14.3)
Transactional problems (weighing, delayed payments, transport problems, etc.)	5 (23.8)
Economic viability (chicory vs. other crops/chicory based cropping pattern vs. alternate cropping patterns)	6 (28.6)
Other reasons	8 (38.1)

** percentage based on multiple response from 21 respondents*

The low prices offered by the firms for the chicory roots as compared to prices offered by private traders was indicated as single most important reason by the farmers (38.1%) for shifting away from contract farming. The next important reason seems to be problems with chicory cultivation itself including problems relating to its economic viability (28.6%) and demand for high labour in drying chicory roots (19.0%). The transactional problems (23.8%) and lack of alternative institutions like cooperatives (14.3%) are some other reasons for shifting away from contract farming or chicory cultivation. In other words, the shifting of farmers away from contract farming is due to multiplicity of reasons with two interrelated problems, viz., low price paid by the firms and declining economic viability of chicory cultivation, accounting for nearly 60 per cent of the reasoning.

3.7 Chicory Farming – An Analysis of Task Environment

During the course of the fieldwork and later at the stage of writing this report, it was felt that the task environment for chicory cultivation in general and chicory contract farming in particularly has undergone change in the recent past. The process of change in task environment began with a steep fall in coffee prices beginning 1997 and continues till now. The important components of this task environment have been briefly discussed below :

3.7.1 Demand for Chicory

The chicory being an additive in coffee, its demand is obviously influenced by the demand of coffee. It is estimated that nearly 80-85

percent of the coffee consumed in India is sold after mixing with chicory in varying proportions ranging from 30-50 per cent. Although reliable data are not available on the production of chicory powder it was estimated to vary between 13500 to 30000 MT/annum during 1970s and 1980s. The trade estimates obtained during our study suggest that during 90s the demand of chicory expressed in terms of dry roots varied between 18000-20000 MT/annum which works out to nearly 12600 to 14000 MT/annum of chicory powder. An update with the industry at the time of writing this reports suggests that the demand for chicory powder has fallen further to 12000 MT/annum of chicory roots or 8400 MT of chicory powder due to continuous fall in coffee prices.

3.7.2 Profitability of Chicory Cultivation

The assessment of profitability brought out the fact that chicory cultivation brings assured profits to the farmers, but concerns were also raised that its profitability is gradually going down. The generic reasons attributed for diminishing profits has expressed by the farmers are (a) increases in labour cost, water charges and manure, (b) yield levels are gradually declining, and (c) the price paid by the firms and private trade for chicory has not increased substantially over last 25 years. The farmers' response with regard to current levels of profitability are presented in Table 3.8.

Table 3.8: Profitability Estimates of Chicory Cultivation

Profit levels (Rs./ha.)	Number of farmers (%)	
	Contract	Non-contract
Rs.4000-8000	16 (43.3)	0 (0.0)
Rs.8001 - 12000	6 (16.2)	10 (47.6)
Rs.12001-16000	6 (16.2)	6 (28.6)
Rs.16001 - 24000	5 (13.5)	3 (14.3)
> Rs.24001	2 (5.4)	2 (9.5)
No Response	2 (5.4)	0 (0.0)
Total	37 (100.0)	21 (100.0)

Note : 1bigha = 0.60 acre

The above analysis indicates that though the contract farmers are receiving seeds free of cost, their profit levels have been reported to be lower as compared to non-contract farmers. Some of the farmers were of the view that this may be due to gap between the prices offered by the firms and open market.

The above data indicate that a large section of contract farmers (43.2%) earn profits ranging between Rs.4000-8000/ha. while non-contract farmers (47.6%) reported higher profit levels ranging between Rs.8000-12000/ha. Further field enquiries revealed that the low profitability levels of contract farmers can be explained by continuous cultivation of chicory and lack of scientific crop rotation. On the other hand, some of the non-contract farmers mentioned that they do not cultivate chicory continuously in the same piece of land to avoid problems of declining soil fertility and lower crop productivity. They further contended that if necessary they can leave chicory cultivation and come back to it when they felt necessary. In fact most of them are aware of the need to retain fertility of the soil through crop rotation. Some of them were of the opinion that it has become more profitable to them after they left contract farming. This probably explains the higher profitability in respect of non-contract farmers though this observation could not be substantiated through data though there are many elements of truth in this conclusion.

3.7.3 Economics of Chicory Based Crop Rotations

This issue of economics of chicory based crop rotations is closely linked to profitability of chicory cultivation and the time it occupies the farm land. This issue seems to be forcing some of the farmers to have a rethink on chicory cultivation. For instance, higher profit levels in other crops such as potato and tobacco in the past few years has been the motivation for 20 per cent of the non-contract farmers to leave chicory cultivation. Another important issue which was brought up by the farmers is of land occupancy by chicory for five months and one more month spent on drying related operations. Hence, only six months are available effectively for other crops. This gives them the time to have just one more crop in any year since most of them opt for bajra after chicory (Table 3.9).

Table 3.9: Other Crops in Chicory Based Crop Rotations

Additional crops to Chicory	Number of farmers	
	Contract	Non-contract
Bajra or Paddy or Vegetables (once/year)	33 (89.2%)	19 (90.5%)
Bajra and/or vegetables (twice/year)	4 (10.8%)	2 (9.5%)
Total	37 (100.0%)	21 (100%)

The above data clearly show that nearly 90 per cent of the farmers are able to grow only one crop after chicory (November – April). Within the three alternatives of bajra, paddy and vegetables, most of the farmers are growing bajra (approx. 65%) and remaining prefer to grow

paddy and vegetables. There were a few enterprising farmers (nearly 10%) who were cultivating three crops in a year (chicory + bajra twice or vegetable twice). Similar observations were made in case of non-contract farmers. However, farmers growing two crops with chicory were of the opinion that it was with severe and strenuous efforts only they could do it. Hence with a view to raise more number of crops (at least three in a year) and increase the fertility of the soil, some farmers are shifting to other crops such as potato, wheat and tobacco for higher returns. This is despite the fact that these crops are more risky than chicory.

3.7.4 Role of the Government

There has been no noticeable role for the Government of Gujarat or Government of India in development of chicory either through improvement in its production technology or price intervention when the price falls below optimum levels. Even the state department of agriculture does not have basic statistics and information with regard to chicory production and productivity. However, in the current year, the Government of Gujarat has exempted chicory procurement from sales tax.

3.7.5 Role of Cooperatives

Though contract farming in chicory is in vogue for more than 25 years in this region, farmers do not have any countervailing power to bargain with the processing firms with regard to fixing of price and other terms of the contract. It is understood that whatever grievances are expressed in these meetings by the farmers did not have much bearing on the outcome. Generally, the agents communicate the pre-determined prices of chicory roots to the farmers. Thus there is no organised method of communication between the farmers and processing firms. Some farmers felt that there was no need to bargain for increase in prices since the firms themselves are increasing them periodically. However, substantial number of the farmers said that the increases are not keeping in trend with the prices of other agricultural produce such as tobacco and potato.

A major cooperative intervention was made between 1986-87 to 1991-92 in marketing chicory roots after exorbitant increase in chicory prices without much benefit to most of the farmers. Vaswani et.al. (1992) observed that the failure of cooperative interventions and institutions (village and district level societies in Kheda and Mehsana districts in

Gujarat) during this period was the result of :

- competitors' counter strategies,
- lack of marketing skills in cooperatives,
- conflicts within cooperative channel, and
- no control/access to consumer markets.

In the process, the private traders and multinational companies operating through their agents gained farmers' confidence at the cost of co-operatives as reflected by the farmers attitudes towards various marketing channels. Afterwards, fresh attempts were not made to reactivate cooperatives in chicory trade.

3.8 Issues and Inferences

The findings of the study suggest that majority of farmers currently involved in contract farming of chicory are either highly satisfied (70%) or satisfied (16%). As expected, 62 per cent of the non-contract farmers had unsatisfying experience during the period of contract. The overall percentage of highly satisfied and satisfied farmers declined to 44.8 per cent and 10.3 per cent respectively based on the total number of farmer respondents.

The sources of satisfaction amongst these farmers included terms of payment, free supply of seeds, hassle free transaction and payment of committed price by the firms even in the event of decline in price in the open market. On the other hand, the sources of dissatisfaction amongst the farmers who have shifted away from contract farming of chicory include lower prices offered by the firms (38.1%), declining profitability, poor economic viability of chicory based cropping systems (28.6%), transactional problems (23.8%) and absence of cooperatives (14.3%) in chicory. It was felt that the contract farming in chicory in Gujarat is in for difficult times which is compelling farmers to leave contract farming. The reasons for such inferences are outlined below:

3.8.1 Criticality of Price in Production Contract

Like any another commodity, price seems to be a critical element of the production contract. The most important grouse of the farmers for discontinuing contract production (38.1%) was lower prices of chicory related to open market. At the same time, the farmers do not have any appreciable role in negotiating the price of their produce. It is a common knowledge that the final price of the chicory is much higher when it reaches its consumption markets in southern states, viz.,

Andhra Pradesh, Tamil Nadu, Karnataka and Kerala. Under the circumstances, the farmers do not have a reliable benchmark for judging the fairness of the contract price. It may be worth mentioning that some of the chicory processors have confided that even though they feel that the prices paid for chicory roots are very low, they are unable to revise them since they are minor players in the field. They pointed out that unless HLL as a major player increases the prices to reasonable levels they could not raise the prices on their own.

3.8.2 Extent of Value Addition and Proportionate Realisation by the Farmers

The chicory is a typical product with only single use, i.e., blending with coffee. However, value addition to chicory takes place in two ways; firstly in its conversion to chicory powder and relatively larger value addition (nearly equivalent to coffee prices) takes place in the process of its blending with coffee. In years when coffee prices are high, the coffee marketing firms make wind-fall profits. Therefore, the real test of mutually beneficial relationship between coffee trade and producers lies in the extent of market realisation passed on to the producers in such years. A fair evaluation of the relationship rests on discovering the true answer to the question - does chicory trade (including coffee manufacturers) pass on a reasonable proportion of price realised for chicory in the process of blending it with coffee? In other words, the real price of chicory is its blended prices and should form a bench mark for making comparisons and drawing inferences.

It was mere coincidence that this kind of situation was witnessed during the course of this study. The coffee prices showed sharp increase in 1997 and remained attractive in 1998 as well. Obviously, any blending of chicory in coffee brought windfall profits for the coffee firms. In these circumstances, most of the firms resorted to a comparatively steep hike in the prices to be paid by them to their contract farmers after specifying a lower amount in the contract. This unusual response of the firms was due to their expectation of much lower chicory yields during these years although it was not possible to authenticate the same with accurate data. Having stated earlier that the uncertainties relating to raw material procurement have been overcome to a large extent, then what was the need to announce an enhanced price at the later stage?

It will be important to mention at this stage that this type of announcement of increase in the prices even before the starting of the procurement process has never been done in the past. It only points to the underlying fear of

the firms that the farmers might be prepared to leave them if they are not paid the reasonable prices. The alternative argument may be of the opportunistic behaviour of the coffee marketing firms, which do not want to lose the opportunity of making high profits from chicory (it will sell at the price of coffee after blending) in such situations.

It will be interesting to find an answer to another alternative question - whether the contracting firms would have raised the prices of chicory in a situation where coffee prices are high, but there is ample supply of chicory? In all probability, the answer is 'no'. Such an answer is based on the historical facts wherein the average price paid to the farmers for last so many years has nearly remained static with marginal fluctuations on either side. The negotiation power of the farmers has further weakened because of the failure of cooperatives to sustain competition and counter the manipulative practices followed by the private trade. As evident from the farmer's response that some of them have left chicory cultivation because of absence of cooperatives.

3.8.3 Sustainability of Chicory Cultivation and its Productivity

Secondly, continuous cultivation of chicory forced on to the farmers through the terms and conditions of the contract farming is leading to declining yields coupled with rising cost of cultivation is also deterring the farmers in continuing with chicory. Nearly 43.3 per cent of the contract farmers were earning profits (Range: Rs.4,000-8,000/ha.) which were lower than the non-contract farmers (Range: Rs.8,000-12,000/ha.) due to cultivation of chicory year after year by the contract farmers. Some other compulsions which are enabling farmers to shift away form chicory are poor economic viability of chicory based cropping system (bajra/paddy/vegetable – chicory) and perception of higher profit levels in tobacco and potato based cropping systems. In spite of these problems, the contract farming in chicory continues to attract small and marginal landholders for being less risky. As stated above, the other components of the chicory production contract like free supply of seeds, relative stability of price of chicory roots continue to be the major reasons (in addition to the timely and one time payment effected by the contracting firms) for preference of this segment of farmers for contract farming.

Lately, the pressure is building on the contracting firms to enhance the price payable to the farmers to improve the economic viability of chicory production, which has declined over years due to its continuous

cultivation. The major processing firm, the HLL rather than resolving this problem has started to identify alternate locations in other states, viz., Mathura, Aligarh and Etah in Uttar Pradesh for shifting their chicory cultivation activities. This has led to a sense of insecurity into the minds of the farmers in existing chicory growing areas in Gujarat. This also raises an ethical question regarding the long term commitment of these firms to the farmers after drawing upon the natural potential of their land and other resources.

3.8.4 Chicory Production Contract - Enforcing its Terms and Conditions

Since the quality of the chicory roots is not a major problem, the firms insist upon the quantity of supplies from the farmers as per terms and conditions of the contract. However, the quality in case where transaction is in the form of dry roots is judged by the moisture content. The firms have evolved their own criteria for accepting or rejecting the deficit or surplus quantities from the farmers with adequate penal provisions wherever necessary.

Surprisingly, many of the farmers do not receive a copy of the contract which they have signed and it is generally kept in the custody of the agent to avoid any legal problems. Though most of the farmers are not reneging on the contract and not resorting to selling the produce in the open market during the periods of scarcity and high price for the fear of losing contract with the firms, there are discernible signs of dissatisfaction among them. The reasons for such discontent are:

- Absence of incentives for higher productivity due to ceiling on quantity of chicory to be accepted by the firm from a unit area or against quantum of seed supply.
- The firms have not made any attempt to build long-term relationship with the contract farmers beyond execution of chicory contract.

It will be inappropriate to ignore some of the confidence building measures that have been established by the contracting/processing firms with the chicory farmers in this region. Some of the farmers remember the goodwill gestures extended by some of the firms, e.g.,

- Acceptance of nearly unusable and unfit dried roots due to fungal infection in one of the years. The firm procured it from the farmers as per contract and destroyed the same.

- Similarly, when the open market prices were lower during some of the years, the roots were procured at the contracted price though it meant a higher cost for the firm.
- Some of these firms supplied seeds for the second time within a single season after seeds failed to germinate due to reasons beyond the control of the farmers.

3.8.5 Possible Intervention to Sustain Chicory Contract Farming

The above discussion brings out some important issues which can make chicory cultivation and its contract farming sustainable in the long run. The major initiative in this regard has to come from the contracting firms. Some of the initiatives which are worth considering are:

- The contracting firms have to make price offers more attractive to the farmers by taking two factors into account - a fresh assessment of the costs involved in chicory cultivation and its price prevailing in terminal/consumption markets. The basis for working out chicory price should shift from its cost production to the price of blended chicory (with coffee). The firms may also consider revision of these prices at periodical intervals depending upon the changes in cost of cultivation and prices in the terminal markets. The firms which buy chicory as dry roots should compensate the farmer for extra expenditure incurred in drying the roots and maintaining its quality.
- In order to maintain land fertility and in turn productivity of chicory cultivation, farmers may be allowed to break away from chicory cultivation and return to its contract farming within a reasonable period of 1-2 years. This will help in overcoming their fear of contract termination, maintain productivity of land as resource and will reduce cost of production with improvement in crop productivity.
- Some improvements can also be introduced in the terms and condition of the contract, e.g., the duration of contract can be for a longer period, say, three to five years with the option of reviewing the price every year, making the contract somewhat flexible to allow genuine concessions for situations which are beyond the control of the farmers.

CHAPTER 4

PROCUREMENT OF COTTON - A CASE STUDY OF ARVIND TEXTILE MILLS

4.0 Introduction

In the Indian economy, the textile sector occupies a place next only to agriculture. The textile industry contributes 5 percent to the GDP and nearly 14 percent to India's industrial production. The importance of textile sector can be gauged further by the fact that it contributes nearly 14 per cent to the annual value addition in industrial production, 30 per cent of total exports and direct employment to 35 million people. If cotton and other services are included, the total employment will be in the region of 100 million. India is the world's largest exporter of cotton yarn with 1/4th share of world market, but its exports in other areas (2.9% in textiles, 3.5% in garments) are very low. However, for Rs.1,50,000 crore, Indian textile industry, cotton is the most important raw material. In order to maintain India's global competitive advantage, a strong domestic raw material base is needed for the Indian textile industry. In this context, the availability of cotton as raw material needs improvement in productivity and reduction in cost of production to ensure a price competitiveness in comparison to imported cotton. The Indian cotton also needs radical improvement in quality to compete with imported cotton in terms of levels of contamination and fibre attributes. Currently, these problems have reached alarming proportions resulting in India becoming the 3rd largest importer of cotton from a status of a net exporter until recently. If cotton production shows no significant growth as projected (-1.0% during the decade 1995-2005) by FAO/ICAC, India may have to import more than half a million tonnes of cotton by 2005. However, the situation may change if India can successfully exploit its great production potential.

4.1 The Problem

The Indian textile industry uses a wide range of fibres, both natural and manmade, but its primary dependence is on cotton. In contrast to world consumption pattern of textile fibre, which is tilted towards non-cotton fibres in the ratio of 3:4, the ratio in India is 2:1 in favour of cotton. The level of cotton imports suddenly increased from a level of 55685 MT in 1998-99 to 230626 MT in 1999-2000. The

corresponding value increase was from Rs.376 to Rs.1244 crores. After increasing sharply, the level of imports during 2000-2001 fell by nearly 10 percent. It is quite evident that the country has been spending substantial foreign exchange to meet the shortfall in domestic cotton production. Under such circumstances the need is to gear up the cotton production system for adequate quality supply at reasonable prices to the textile industry.

4.1.1 Demand - Supply Gap

India is the third largest producer of cotton in the world with its share varying between 12-14 per cent of the world production during the period 1997-98 to 2000-2001. This corresponds to production of 11-12 million bales against world production of 85.0 – 91.8 million bales during the period under reference. On the other hand, India's share in world cotton consumption, which varied between 85.3 to 92.1 bales during the reference period, is relatively more stable and ranges from 14.5 to 14.8 per cent. The data indicate that currently India occupies 2nd position as consumer and 3rd position as producer of cotton.

According to recent projections by FAO/ICAC, total mill consumption would reach 2.85 million tonnes by 2005, assuming that domestic cotton production remains unchanged and that there is a slight decline in consumption per capita. Against this projected demand for mill consumption, the total demand during the year 2001-02 was of the order of 2.96 million tonnes. This consisted of 149 lakh bales (2.533 million tonnes) of mill consumption, 12 lakh bales (0.204 million tonnes) for small scale units, 12 lakh bales (0.204 million tonnes) for non-mill requirement and one lakh bales (0.017 million tonnes) for exports. If non-mill consumption and small-scale mill consumption, which together amounted to 0.23 million tonnes in 1996/97 are included, total cotton consumption will be well above 3 million tonnes. If the expectations of the textile industry are met, India should boost its share of the expanding global market from 3 percent in 1998 to 5 percent by 2005. This implies nearly doubling the exports of textiles. In order to meet the increasing demand of the textile industry, cotton production should grow annually by at least one percent in next few years which will mean reversal of projections made by FAO/ICAC (-1.0% during the decade 1995-2005).

4.1.2 Productivity as Barrier

India occupies top position in the world in respect of area under cotton cultivation but ranks third in total production, clearly meaning low productivity. The area under cotton cultivation varied between 8.85-9.16 lakh ha. during last seven years with corresponding average yield of 318kg/ha. with yearly variation ranging between 296-330 kg/ha. in last few years.

The level of productivity is low as compared to the world average of 600 kg/ha. (Israel ranks first with 1814 kg/ha.) and still lower in comparison to other high productivity countries like Australia (1500 kg/ha), Turkey (1171 kg/ha.), USA and China. Even the availability of irrigation which nearly covers 35.8 percent (in 1996-97) has not proved too helpful in improving productivity. The low productivity of cotton is one of the important reasons for declining global competitiveness of Indian textile industry. Some of the important reasons for low productivity of cotton include

- Nearly 2/3rd area under cotton is rainfed and therefore, is subject to the vagaries of monsoon.
- Multiplicity of traditional poor yielding cotton varieties coupled with problems of the non-availability of seeds of improved varieties in terms of quantity and quality.
- Relatively higher incidence of pest and diseases and poor quality of crop husbandry.

The important measures which are being suggested to improve cotton yield in the country are:

- Varietal improvement in terms of high yield potential, resistance to major pests and diseases and crop duration to escape natural calamities.
- Effective technology transfer by using tools like 'on-farm research' and extension approach of 'seeing is believing'.

4.1.3 Cost Competitiveness

The low productivity might erode the cost competitiveness of Indian cotton and that of manufactured textile products. Therefore, increase in productivity and simultaneous reduction in production cost are two essential requirements to ensure price competitiveness of Indian cotton which currently faces threat from imported cotton on following counts:

- Firstly, the introduction of genetically modified Bt (Bacillus thuringiensis) cotton has improved productivity in many countries.

- The high level of subsidies recently extended to US cotton farmers is distorting the international trade through falling global prices. Despite low world prices, US farmers are expected to continue producing large amounts of cotton with the help of higher subsidies, preventing a recovery in prices. Resultantly, US farmers are able to offer good quality cotton far cheaper than competitors like Australia, Brazil, Uruguay, CIS (Commonwealth of Independent States) nations, Turkey and countries in West Africa. It is for this reason that US has emerged as the top exporter of cotton to India. The threat of cotton imports into India will always loom large if local cotton prices exceed global prices even though India has raised the import duty on raw cotton from 5 percent to 10 percent to curb imports.

- Such distorted cotton trade at lower world prices will drive up subsidy cost to the Government of India. The government does have a subsidy programme for cotton farmers which consists of indirect (reduced prices for fertilisers and pesticides) and minimum support price (MSP) to buy cotton from the farmers, if market prices fall below the MSP. In the cotton year 01-02 (Oct-Sept) the government spent nearly Rs.80-90 crore on purchasing cotton from farmers compared to a negligible amount in 2000-01. However, if subsidies in the US continue the world prices will fall further to only drive up the subsidy cost in the cotton year 2002-03.

If the above situation continues, India's export competitiveness (expressed across countries in terms of specialisation indices) in textiles, which is currently ranked 4th by the International Trade Centre (ITC), may slip down further.

4.1.4 Quality Constraints

In addition to productivity, the quality of cotton is an equally important concern as it determines the quality of the end products. The quality of cotton is generally judged on various criteria, viz., fibre length and strength, its colour, texture and fitness beside the degree to which it is free from contaminants and immature kapas. Contamination nullifies the benefits of introducing improved varieties, impairs the quality of raw cotton and adversely affects the subsequent processes of textile production.

Indian cotton continues to carry the stigma of very high degree of contamination resulting in reluctance of many consumers in Europe

to buy Indian cotton. The "Cotton Contamination Survey 2001" observed that foreign matter, stickiness and seed-coat fragments in raw cotton continue to be among the most serious problems affecting the cotton spinning industry world-wide. The report observes that the most contaminated descriptions in terms of foreign matter and seed-coat fragments originate from India. The other countries having high contamination problems are Pakistan and Tajikstan. In terms of specific contaminants, Nigerian cotton was high in foreign matter, Sudanese in stickiness and seed-coat fragments.

In India, cotton suffers contamination successively first at the farm level, and later in mandies and in ginneries (Table 4.1).

Table 4.1: Contamination of Cotton at different Levels between Farm to Factory

Stage		**Type of Contaminants**	**Reasons**
Level	*Activity*		
Farm	Picking	Trash, leaves, hulls and twigs and weeds	Short cut methods (labour wages by kilos of cotton picked) in picking cotton to save expenses.
		Strings and fabrics of jute/woven plastic	Bags shredding and patch up materials due to use of worn out bags for picking
	Home Storage	Sweepings, hairs, pieces of fabrics, dust, strings, etc.	Storage in the small house and transportation in bags made of jute/HDP material.
Trader	Transport & other	Mix of two varieties Mix water/crystal salt	To save transportation cost To make cotton bags gain weight
Marketing yard	Product display & marketing	Dust, tree falls, bird droppings, rain, strands of jute/hessian, colour marking ink, market yard litter	Marketing yards are unclean without proper flooring and roofing. Influx of people and food articles in market yards. Rolling, shifting and piling of cotton in marketing yard
Ginning factories	Ginning and pressing	Dust, strands of jute/ hessian bags and other foreign matter	Improper filling of bags, poor storage, shifting of cotton from ginning to pressing area, poor hygiene in the work area and poorly maintained gins

Source : Mainly drawn from Chinnaswamy, M (1999), "Contamination – Controls and Commitments."

- Contaminated cotton becomes sticky and creates spinning problems, wastage of dye material, fragments of contaminants getting impeded in cotton yarn resulting in wastage of raw materials and cost inflation. Therefore, the resolve to avoid contamination has to percolate down from the textile mill management, to the ginner/trader, to the handlers of raw cotton at marketing yards and finally down to the cotton growing farmer. In other words, 'quality care' during post harvest handling and primary processing of cotton has become a necessity. Some of the impressions of the knowledgeable persons in the industry suggest that
- Out of different stages indicated above, marketing yards are the worst breeding grounds of contamination, and
- A collective effort by the state, the mills, the ginner, the trader and the grower is necessary to improve cleanliness levels of Indian cotton.

4.1.5 SWOT Analysis – Indian Textile Industry

The SWOT analysis of the Indian textile industry besides many other factors also identifies low cotton yield and poor quality as some of the major constraints. This deficiency will reflect in increased prices, poor availability of raw material and inferior quality of output (Chandrasekhar et.al., 2001). The low cotton yield will not make cotton available for international trade and will limit India's share in world markets. On the other hand, poor quality and subsidies by competitors will make it mandatory to import better quality cotton and thus will also act against taking advantage of opening up of world markets.

4.2 Current Initiatives

It is against the above background and in view of the importance of cotton in the Indian economy, current initiatives include launching of a Technology Mission on Cotton (TMC) in early 2000 and recently, clearance by the government for cultivation of Bt cotton.

4.2.1 Technology Mission on Cotton (TMC)

The National Textile Policy – 2000 states that with regard to cotton production "the primary aim will be to improve production, productivity, and quality and stabilise prices". The Technology Mission on Cotton (TMC) will be the instrument for achieving these parameters. The mission proposes to address the problems relating to low

productivity, poor quality and relatively high cost of production. The main objectives of the mission are:

- Improve yield and quality through better cotton varieties and quality of crop husbandry.
- Increase income of cotton growers by reducing cost and increasing yield through proper transfer of technology. This will facilitate increase in production and availability of cotton for internal consumption and exports.
- Improve quality of cotton particularly in terms of contamination by improving marketing infrastructure.
- Improve cotton processing facilities by up gradation/modernisation of existing ginning and pressing (G&P) factories. The resultant quality improvement with tolerable or no contamination will produce better value added products like yarn, cloth, garments, made ups, etc.

The above objectives are planned to be achieved in a mission mode. Under the TMC, four mini-missions have been established (Table 4.2).

Table 4.2: Mini Missions under Technology Mission on Cotton

Mini Mission	Objective	Nodal Agency
I	Cotton Research and Technology Generation	Indian Council of Agriculture Research (ICAR)
II	Transfer Technology and Development	Dept. of Agriculture and Cooperation, Min. of Agriculture
III	Improvement of Marketing Infrastructure	Ministry of Textiles
IV	Modernisation/Upgradation of Ginning and Pressing Factories	Ministry of Textiles

In addition to the nodal agencies, numerous other agencies have been involved to implement each Mini Mission. The working of TMC will be coordinated by Agriculture Commissioner, Dept. of Agriculture and Cooperation, Ministry of Agriculture. An outlay of Rs.566.50 crore was

provided for the period 1999-2000 to 2001-2002. The progress achieved by TMC by March 2002 covered:

- Three Integrated Cotton Cultivation (contract farming) projects were taken up.
- Around 51 project proposals covering setting up or improvement or activation of marketing yards were sanctioned involving Rs. 74.95 crore.
- Modernisation of 150 G&P factories was sanctioned at an estimated cost of Rs.173.60 crore.

4.2.2 Cultivation of Bt Cotton

After its dependence on hybrid cottons for nearly three decades, India is now entering into the era of genetically modified cotton. The cultivation of Bt cotton has now received clearance from the government and is likely to reduce the cost of production by cutting down on pesticide use, provide environmental protection and finally higher yield as compared to traditional varieties.

The South India Textile Research Association (SITRA) has projected that the cotton requirement will touch 205 lakh bales by the end of year 2004-05 and will comprise 180 lakh bales for production of spun yarn, 15 lakh bales for blended yarn and 10 lakh bales for technical textiles. However, it will be sometime before the domestic cotton production can meet the quantitative and qualitative requirement of the textile industry.

4.3 Methodology

The reference organisation for the study was Arvind Mills Limited (AML), Ahmedabad, a flagship company of the Lalbhai Group. The field enquiries with regard to this study were made at various levels as detailed below:

- The first level was Arvind Mills itself involving its senior officials with a relatively closer interaction with its cotton procurement division. An interaction was also arranged with the management of M/s. Shanmugavel Mills Ltd., Dindigul in Tamil Nadu to understand the process of building backward linkages with their ginners.
- The next or second level of interaction was with the cotton trade including variety of trade participants (wholesalers, commission agents and brokers) and cotton processors owning ginning mills.

The number of traders contacted were around 10 in addition to 11 ginning units. Amongst the units visited for enquiry 4 were located in Mehsana (Kadi), 3 ginners in Baroda (2 in Bodeli and 1 in Palej), 1 in Kutch (Anjar) 1 in Ahmedabad (Dhanduka) and 1 in Coimbatore (Pollachi) in Tamil Nadu.

At this level, number of officials holding important positions in public (Cotton Corporation of India) and cooperative institutions (cooperatives located at various levels, viz., village, taluka, district and state) including managers of cooperative ginning factories were also contacted for discussion and gathering information. As a part of the study, the villages adopted by CCI in Bodeli were also visited to observe and investigate the status of CCI adopted villages.

At the village level, around 30 farmers representing major cotton growing districts of Gujarat, viz., Ahmedabad, Bhavnagar and Gandhinagar were interviewed through a structured questionnaire. The farmers survey was spread over in 12 villages in three talukas of the districts in Gujarat.

4.4 Arvind Mills – A Profile

The Arvind Mills Limited (AML), Ahmedabad is the flagship company of Rs.20 billion (US$550 million) of the Lalbhai Group. The Arvind Mills came into existence in 1931 and today it is one of the top ten manufacturers of denim in the world and it is on its way to become a global textile conglomerate. The current fabric product range includes Denim, Knits, Shirting and Bottom weights with value added through a range of ready-to-wear. The company is also engaged in customised manufacturer of ready-to-wear products for a number of other national and international brands. The sales turnover of the AML was Rs.1251 crores during 1999-2000 which rose to Rs.1877 crores during 2000-2001 (18 months).

The AML is one of the largest buyer and consumer of cotton in the country. The raw material purchases of AML, dominantly consisting of cotton, have gone up from Rs.361 crore in 1996-97 to Rs.519 crores in 1999-2000 and further to Rs.794 crores in 2000-2001 (18 months).

4.5 AML - Cotton Procurement Arrangements

The AML has a cotton procurement division which regularly buys from various types of buyers in the market. The broader policy seems to be a mix of building relationships with select suppliers and at the same time keeping open the option to buy from the open market in case of

a price advantage. This policy probably facilitates the AML to strike a balance between quality and price. This policy is reflected to some extent in the performance statement of the AML for the quarter ending March 2002 which states "the company has covered almost the next twelve months requirement of cotton as these prices are amongst the lowest in recent times".

The four important sources which AML was observed to be using for procuring cotton included:

i. Cotton ginning and pressing units (directly or through brokers),

ii. Gujarat Cooperative Cotton Federation popularly known as GUJCOT,

iii. Central market intervention agency like Cotton Corporation of India (CCI), and

iv. Market yards (through brokers).

An attempt has been made to depict the complex networks deployed by each of these agencies to procure cotton and players involved in this network at various levels. The sketch illustrates that the ginners representing the private trade deploy longer procurement channel, but operate in the market with greater flexibility as compared to state agency like CCI or cooperatives like GUJCOT (Fig.4.1).

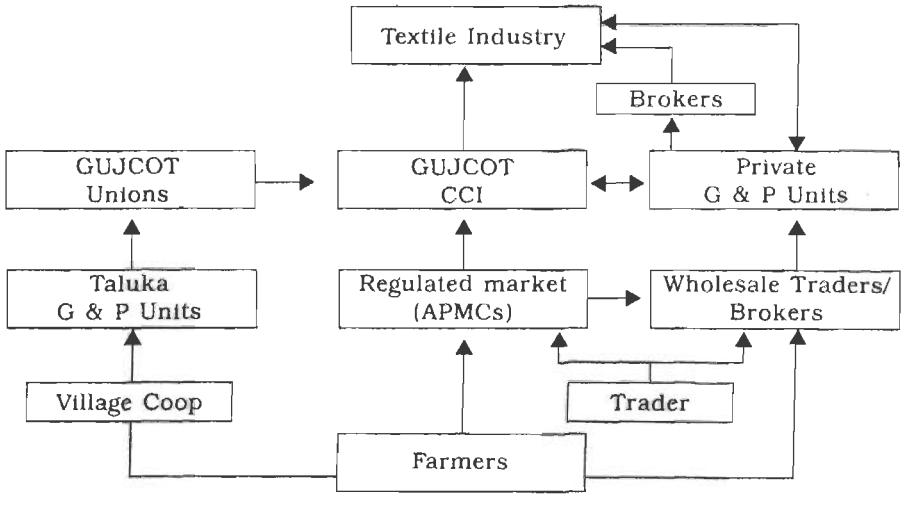

Fig.4.1: Cotton Procurement – A Sketch of Farmer Industry Linkage

The farmers exercise various alternatives in accessing buying agencies. The most commonly used alternative for the farmers having economies of scale in production, seems to be the regulated market. The other

alternative is to sell to specialised commodity cooperative like GUJCOT which operates through 3-tier structure consisting of village/taluka level societies which federate into cooperative unions at district level which in turn federate to state level apex cooperative, viz., GUJCOT. The small and marginal farmers generally approach the trader or middlemen and sell the produce at village level itself due to lack of economies of scale in production. Some of the big farmers also function as middlemen in favourable market situations. Such transactions undertaken by various types of middlemen are categorised as unregulated as they are based on individual negotiations rather than the norms followed in regulated markets. The central agency like CCI has a policy of purchasing raw cotton from the regulated market yard only.

All these buying agencies have to organise primary processing of cotton in ginning and pressing factories (G&P) before its delivery to the textile/ spinning mills. The primary processing in G&P factories adds a typical structural dimension to the cotton trade. The G&P industrial units were observed to be under private or cooperative ownership. The private and cooperative trade channels undertake primary processing in their respective units while CCI uses both types of units on hire basis with preference to cooperative units.

The additional feature of AML cotton sourcing operation is deployment of brokers even while buying cotton from private G&P units. Interestingly, AML is also in direct touch with these ginners for technical and quality advise, but financial transactions are undertaken only through the brokers. Though this arrangement transfers all the risks of delivery, quality, price, etc., onto the broker, but at the same time adds upto the total transaction cost. However, AML probably views this as a trade off in a highly uncertain supply scenario where raw material supplies can fail both on quantitative and qualitative parameters.

4.6 AML –Linkage with Cotton Suppliers

The AML is sourcing its cotton from a number of suppliers which mainly include ginners-cum-traders, GUJCOT, CCI and other brokers/ commission agents. These linkages between the textile industry and its suppliers evolve in a given task environment. In the current task environment, India has a globally competitive textile industry without similar competitive advantage in the raw material like cotton. This limitation brings in some peculiar issues which influence the degree of linkage which AML has with its raw material suppliers. It is in this context, that the study attempted to understand the complexities of this

critical linkage with reference to the textile industry in general and that of AML with its major suppliers.

4.6.1 Ginner-cum-Trader/Trader Linkages

As stated in the previous section, the AML was sourcing relatively larger quantum of cotton from G&P units having the best ginning and pressing facilities. Given the severity of quality problems in Indian cotton, the AML maintains direct linkages with selective G&P units in order to keep quality problems under check. The scope of linkage covers price negotiations, quantum of supplies, quality specifications and areas of modernisation in the factory to maintain quality.

4.6.1.1 Profile

The ginning and pressing industry in India is more than 100 years old and continues to be in the small scale sector. Of the estimated 4000 ginning factories in India, only 500 are composite (meaning additional handling of cotton for shifting to pressing units in non-composite factories). However, most of the ginning units in the country are still using same old out-dated technology with inadequate and unscientific storage facility. Above all, factors like seasonality and inadequacy of raw material due to surplus installed capacity has raised serious concerns regarding financial viability of a number of existing units. The Gujarat ginning mills numbering nearly 700 produce more than 45 lakh bales per annum, but all these years the ginners have not made any serious effort to establish backward linkages with the farmers to improve the quality of cotton procured and ginned. The lack of quality concern at the level of ginning mill is due to following reasons:

- nearly 90 percent of the ginning factories in the country are run on job work basis, and
- textile mills are not willing to pay any premium for better quality or for additional facilities provided by the ginning units.

4.6.1.2 AML Criteria for Establishing Linkage

The parameters which are generally used by AML to select ginning and pressing units for direct purchase are:

- Infrastructure
- Skill levels of people
- Housekeeping
- Service quality/attitude
- Past quality record
- Other clients

Given the above criteria, the AML selected 13 G&P units, in Karnataka (4) for supply of long staple cotton and Gujarat (6) for procurement of Shankar-6 cotton. The distantly located Karnataka state was specifically selected for its finer varieties of long staple cotton and the sourcing effort of AML was restricted to only four G&P units to meet its specific quality requirements. The remaining nine G&P units were selected from three industrial concentrations in Mehsana, Vadodara and Ahmedabad/ Kutch in Gujarat (Table 4.3).

Table 4.3: G&P Units in Supply Link with AML

Name of G&P Unit	Location	Raw Cotton Purchase*
Raja Industry	Kadi (Mehsana)	90 : 10
Tirupati Oil Industry	-do-	40 : 60
Cot Industry	-do-	50 : 50
Vaibhav Industry	-do-	—
V.G. Gins Ltd.	Palej (Vadodara)	0 : 100
Durga G&P Ltd.	Bodeli, (Vadodara)	100 : 0
Mahavir G&P Ltd.,	-do-	100 : 0
Atmaram. M. Industry	Ahmedabad	—
Bansidhar G&P Ltd.,	Anjar (Kutch)	0 : 100

** Approximate proportion of purchase from regulated markets : non-regulated sources*

It is evident from the above table that most of the G&P units linked to AML mainly source their raw material from regulated markets with some exceptions. It was observed that two of the units were sourcing nearly half of their cotton requirement directly from farmers/ unregulated sources (traders) while two other units were totally dependent on these sources.

4.6.1.3 Strengthening Linkages with Ginners – Upside and Downside

The quantum of supply between the ginners and the AML is contracted before the beginning of the season based on select criteria. The purchase committee of the AML reviews the past performance of each

ginner of these criteria before entering into such contract. Generally, when the ginner does not comply with the instructions of AML to improve quality continuously for 2-3 times, his services are discontinued as regular supplier.

In order to ensure quality, AML closely works with these G&P units in upgrading the quality standards in general, and minimise contamination in particular. This objective is operationalised through a set of actions such as :

- Regular Ginnery Supervision
- Hygienic Loading/Unloading Practices
- Improved Packaging
- Sampling before Bale Pressing

The observations of the purchase committee with regard to quality of cotton supplied in a particular season are given to ginners followed by personal contact during the slack season to ensure that the quality deficiencies do not recur in future supplies. In addition, a dedicated team of AML officials try to sensitise the ginners and associated farmers by organising seminars. The team interacts with G&P units' personnel at all levels including management committee, managers and employees. Specially designed training programmes are also organised for ginners with respect to modernisation of G&P units, quality specifications in global markets ways and means of containing contamination etc. The AML has also distributed video films and photos to G&P units regarding improved practices to keep cotton clean during the process of production, handling and ginning and pressing. At some point of time, cotton cloth bags were supplied to ginners at a nominal charges to procure cotton from farmers. Such campaigns seem to have succeeded in enforcing modernisation of G&P units and improvement in quality standards. Consequently, the ginners were rewarded by AML with premium prices to compensate for tightening their procurement network and for making investments in ginning technology improvement.

An enquiry into the downside of establishing and strengthening such linkages revealed some interesting facts. The success of initiative by the AML to strengthen backward linkages and associated rewards in terms of price premiums to the select ginners also encouraged other ginners (not associated with AML) to embark upon modernisation and improve quality standards including low levels of contamination in raw cotton. Unfortunately, the mills could not sustain the momentum of paying premium prices for relatively cleaner cotton due to fall in raw

cotton prices in international markets. For similar reasons, AML could not afford to pay premium prices for other cotton used in manufacture of regular/value for money textile products. For instance, the linkages with the G&P units in Karnataka which deal with DCH cotton for shirting, premium prices could be paid as a reward for maintaining quality. This was not possible in case of Shankar and other short staple varieties. Under the circumstances, the focus of AML and other textile mills shifted to cutting down the cost of raw material. This compulsion in the context of Indian markets, sets in a chain reaction with mills not paying premium price to the ginners and in turn, ginners not paying premium price to farmers for raw material of relatively superior quality. Resultantly, farmers seem to lose incentives to produce relatively superior quality cotton.

4.6.1.4 Plans towards Zero Contamination

In the medium term, the AML is trying to attain zero contamination at all stages of handling, i.e., from farm gate to storage godown and to achieve this, AML has introduced the practice of signing MOU with its ginners and other suppliers to include:

- Contamination standards
- Supply and service specifications
- Bale packaging norms
- Loading and transportation norms
- Spot supervision of ginning operations.

All the ginners do not seem to fully endorse such efforts without being rewarded with adequate compensation for improving quality. Some of them also perceive that the textile mills do not pay desired attention to various dimensions of quality and also in rewarding quality for following reasons:

- Believe that sophisticated technology at mill level is adequate to improve cleanliness of cotton.
- Some of the mills have successfully standardised processes to mix varieties of different staple length and count to achieve reduction in raw material costs and therefore, do not feel the need of putting considerable effort in improving the quality of raw material.

4.6.1.5 AML - Ginner Linkage (Through Broker)

The AML also deals with another set of ginners through brokers to attain some flexibility in their procurement operation to respond to

situations like increase/decrease quantum of purchase, demand in terms of specific quality requirement, take advantage of favourable market price, etc. The AML deals with these ginners directly including framing of terms of transactions, but all the financial transactions are done through broker. The broker plays important role in ensuring raw material supplies in time, desired quantity, as per quality specifications, etc. In other words, the brokers ensure reliability of transaction when a big firm like AML is dealing with unknown or less reliable suppliers. During our study, we observed that all the G&P units located in Bodeli were operating through brokers only.

4.6.1.6 Textile Mills – Ginner Interface : Opinion Survey

The ginning houses are one of the two (other being the cotton trade) key intermediaries in the supply chain between the cotton producers and textile mills. Even the TMC (under Mini-Mission IV) has recognised, the role of G&P units in improving the quality of cotton available to textile mills. The TMC has already sanctioned modernisations of 150 G&P units by March 2002 with preference to composite ginning units at an estimated cost of Rs.173.60 crores. This seems to be a small beginning considering that there are 4000 G&P factories including 500 composite units (having both roller and saw-ginning). The following problem perspectives emerged during the course of this study:

- **Policy Issues :** The policy initiative of the Government of Gujarat in late 1980s to promote Small Scale Industries (SSI) including G&P units with subsidy and sales tax incentives led to indiscriminate growth of G&P units. Due to these incentives, the installed capacities of these units increased from 3 million bales to 10 million bales per year. The increase in installed capacity increased competition to unethical levels due to sub-optimal use of installed capacity in many of the G&P units particularly the old ones. These benefits have been withdrawn with effect from April 1, 2000, but the damage to the industry has been immense resulting in closure of many old units causing losses to the cotton economy in the state.

- **Modernisation Programme – Contradictions :** The ginning and pressing industry in India is more than 100 years old and continues to use out-dated technology. During our study we observed that a number of ginning and pressing units have undergone modernisation programme in addition to various measures to control contamination of cotton. As already stated, the

textile mills like AML use rigorous criteria to select and hire the best G&P facilities. However, many of the ginners perceive that they have been forced into a situation of implementing modernisation programme in their mills without corresponding monetary rewards from the textile mills benefits for producing better quality cotton. They are of the opinion that the textile mills have been successful in pushing on to them the additional task of minimising contamination and thereby the need for investment in modernisation/upgradation. The G&P units have to absorb the extra financial burden on account of:

- increase in processing loss of cotton from 1 to 3 percent, and
- additional cost incurred in keeping cotton free of contamination without corresponding price incentive in general barring a few cases.

At the same time, some of the ginners expressed the view that ginners need to make up this loss by reducing labour requirements, improving productivity and utilisation of installed capacity.

Opportunist Behaviour of the Buyers (Mills) : Many of the ginners reported opportunistic behaviour on the part of textile mills which seems to express itself in the following ways:

- Most of the mills have made it a practice to buy raw material on credit ranging from 21 to 60 days. This practice places extra financial burden on the ginners towards mobilising additional working capital from informal sources to make cash payment to the farmers.
- The ginners also suffer default risk due to failure of the buyer to honour the purchase deal particularly in situations of price fall or sudden closure of the mill.

4.6.1.7 Ginners – Concerns and Initiatives

The growing realisation about quality in the textile industry and the fact that the ginning units are the last link in the supply chain where removal of cotton contamination is possible, brought more pressure on them to make additional efforts to improve quality and reduce contamination. Such pressures resulted in investments in modernisation of ginning mills which gained further momentum after inclusion of modernisation as an important component of the TMC, 2000 initiated by the Government of

India. In our field enquiry, the ginners highlighted the following reasons for undertaking modernisation programme:

i. Reduce processing cost,

ii. Gain recognition and image as a quality supplier, and

iii. Build linkages with known textile mills and has option of prioritising amongst the buyers.

However, such modernisation can only resolve part of the problem as modernisation of ginning and pressing units can only prevent the occurrence of contamination at the ginning factory level; but can not help in eliminating the contaminants that are already present in the cotton. Further, the processing of contaminated cotton at the gins will only increase the problem, as fragmented contaminants become undetectable at the mill stage. It is, therefore, recognised that separate efforts are needed outside modernisation programme to keep the cotton clean during its transit from farm to ginning mill after undergoing 3-4 handlings.

The cotton as a raw material is sourced to the ginning mills through large farmers/traders/commission agents. It is estimated that nearly 70 percent of the cotton produced in the country is channelised through private trade while the remaining 30 percent is handled by public sector organisations like CCI and state cooperative cotton federations with Maharashtra State Cotton Growers Cooperative Marketing Federation accounting for major share under cotton monopoly procurement scheme. These private intermediaries have little knowledge or concern about quality of cotton and implications of contamination for the textile mills. Resultantly, the farmer and the trade seem to remain unconcerned or ignorant about the quality dimensions leading to multiplication of contaminants at various stages of handling, i.e., at farm, during transportation, in the marketing yard and in the ginning mill.

Therefore, ginners have also started making parallel effort to create awareness and influence the quality at intermediate stages between the farm and ginning mill. The enquiries made from AML officials in this regard coupled with our own observations made during the field research indicated that the private trade/ginners have started new initiatives in this direction to improve the quality of raw material procured. Some of the indications in this regard suggest that:

- The ginners are taking their own initiative to procure quality cotton from the farmers. Towards this end, the visit of ginners to farmers'

field to educate them on quality are quite rewarding, but such activities are rare. Another section of ginners feel that such activity is a wasteful exercise in absence of reliability of the farmer/trader as a supplier in a dynamic price situation.

- Some of the ginners send their personnel to the farmer's field along with the transporters or broker at the time of cotton procurement to sensitise the farmers with regard to quality. They attempt to maintain transparency of the purchase process by explaining to the farmers the reasons for price reduction or price premiums.

- In a few cases, ginners are exposing farmers to educational material (photographs and videos) to facilitate them to adopt production and handling practices to improve cotton quality.

4.7 Cooperative Linkages

The cotton cooperatives were established in the State in 1919 beginning from Surat district. Over time, a loosely knit structure has evolved consisting of more than 500 primary cotton cooperatives, 150 G&P societies and 8 district marketing unions which have been federated into a state level federation Gujarat State Co-operative Cotton Federation Ltd., (GUJCOT). At the grass root level, the cooperative structure consists of primary (village-level) cotton marketing cooperative or multipurpose cooperative, which also market cotton. The farmers can also become members of ginning and pressing cooperatives, which also market cotton. The primary cotton or multipurpose societies generally get their cotton ginned and pressed in cooperative units and engage private units wherever cooperative units do not exist (Fig. 4.2).

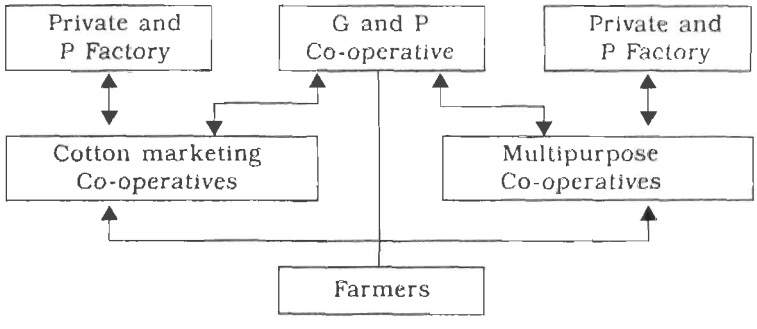

Fig. 4.2: Network of Ginning and Pressing Transactions

Source: Rajaram, N (1999), Politics and Cotton Co-operatives in Central Gujarat, Economic and Political Weekly, Vol.34 (30), 2095-2103

All the cooperatives whether marketing, multi-purpose or ginning and pressing, are members of district level unions which in turn federated into GUJCOT. Even though, the structure of cotton cooperatives from village level to state level is vertically integrated, the cooperatives at each level enjoy autonomy, e.g., village-level cooperatives till late 1980s had preference for marketing through traders, but afterwards with change in demand supply scenario their preference have shifted for marketing through unions.

The cooperative practises "pooling system" of marketing. Under the system, the farmer members pool their cotton at the cooperative which gets it ginned and pressed into bales. Once all the cotton in the pool is sold, cooperatives work out the price of raw cotton after deducting all the expenses incurred. The farmer members are paid this price and the cycle from pooling to payment may take 5-8 months.

The GUJCOT operationalises its procurement operation by opening cotton purchase centres in different parts of the state including in the area of member unions. The other major activities of cooperative societies coordinated by GUJCOT include:

- Distribution of fertiliser to the members. Making special arrangement for sale of fertilisers in backward areas through the depots opened by GUJCOT.
- Organise production of seeds through cooperative societies of the member unions under seed plot programme. The seed produced is distributed back to the cooperative societies.
- Provide state-of-art quality testing facilities for samples of cotton bales.
- Organising exports of cotton.
- Voicing the concern of cotton farmers through organising seminars and regular publication of Kapas Bulletin.

It was quite evident from the study that amongst various procurement agencies, cooperatives have tried to create meaningful linkages with their membership.

4.8 State Agency Linkages - Cotton Corporation of India (CCI)

The CCI is a Government of India undertaking for cotton marketing in the country (except Maharashtra). In addition to marketing activities, CCI has a number of schemes to benefit cotton growers and upgradation of ginning and pressing facilities. Some of the schemes are described below:

- Marketing Operations : CCI undertakes its marketing operations both through price support and commercial operations. The CCI undertakes price support operations on behalf of GOI, whenever the market prices of Kapas fall to the level of support prices announced by the government. As per CCI there have been far and few occasions in recent years for undertaking such operations. The commercial operations are conducted through purchase of cotton (Kapas) directly from cotton growers or through commission agents in open auctions in the regulated markets. In turn the cotton is processed in cooperative or private G&P units and sold to textile mills to meet the specific demand from the mills including Export Oriented Units (EOUs). Like cooperatives, the share of CCI percentage sales to public sector mills has sharply fallen over years from 91.32 percent in 1990-91 to around 19.34 in 2000-01.

- Cotton Development Schemes : In addition to its core activities of marketing cotton, CCI has initiated some schemes for the benefit of growers and G&P units. The specific schemes cover activities like production and supply of certified seeds, distribution of inputs, village adoption programme, R&D programme, crops surveillance and modernisation in existing G&P units.

The field research conducted as a part of this study indicated that the involvement of CCI in the above mentioned activities is declining. In fact, CCI seed production programme initiated in 1991 offered incentives to farmers (Rs.15/kg) for producing better quality seeds of more than 95 percent genetic purity of varieties Sankar-6 and 10. The seeds produced were sold through Gujarat State Cooperative Marketing Federation Ltd., (GUJCOMASOL). The programme has become almost non-operational from 1999-2000 onwards. Secondly, the village adoption programme started in the State in 1994-95. The programme primarily covers the promotion of one variety in the village, organises seed distribution on subsidy ranging from 25-50 percent, distribution of pesticides and fertilisers without service charge and organisation of seminars and meetings to raise awareness regarding scientific farming of cotton. This programme has also been downsized in Gujarat in recent years with number of adopted villages falling from a high of 47 (3850 ha.) in 1999-00 to 24 (480 ha.) in 2000-01. In our survey area Bodeli, it was observed that awareness about the village adoption programme is lacking amongst villages. Some of them became aware of the programme only after the cooperative society asked them to

produce a verification certificate of being a farmer of the village to extend subsidy benefits. The farmers seem to be showing resistance to adoption of varieties (Sankar-6 and 10) being recommended by CCI for quality reasons. The farmers' viewpoint is that the yield of these varieties is reducing year after year and have also developed resistance to pesticides. The CCI was also observed to be supplying pesticides to the farmers from its own procurement centres on cost-to-cost basis. The concerned officials were found to be irregular in visiting the adopted villages to render technical advice or monitor the programme.

In terms of research, CCI has sponsored a research project being undertaken by Gujarat Agriculture University for further improvements in cotton variety V-797. The CCI's third major initiative is to extend incentives to G&P units in purchase of cotton in lieu of adopting modern technology and creating necessary infrastructure towards reducing contamination levels in cotton. The standard incentives given by CCI were observed to be conditional and work out to nearly Rs.36/bale (170 kg) if availed in full. The eight conditions which have been prescribed range from building of pucca platform, lint opener, extra packing of bales, double roller gins, etc. In all, the CCI interventions have not made much impact in building its linkages with the farmers. As a result private traders were found to be dominating even in adopted villages and seem to offer competitive prices and better services as perceived by the farmers.

4.9 AML Suppliers - Farmers Interface

During the study, an attempt was made to understand the problems affecting procurement agencies -farmer interface or cotton production-primary processing interface which seems to revolve around two major but closely linked dimensions, viz., pricing and quality. In the process of sourcing cotton, ginners directly come in contact with a few large farmers but by and large it is through traders and marketing yards. Our inquiries with procurement agencies, viz., private ginners, cooperatives, state agencies like Cotton Corporation of India, traders and farmers brought up some of the important issues relevant to this interface, which is a critical link in the cotton supply chain. Some of the findings and observations are detailed below:

4.9.1 Neglect of Quality Issues

The main objective to be achieved, during this interface is to produce and provide good quality raw material to the textile industry. But on the other hand, Indian cotton is seriously contaminated as indicated

in the "Cotton Contamination Survey 2001" conducted by International Textile Manufacturers Federation", based in Switzerland. Our structured and open ended inquiries at various levels brought up following issues which are closely linked to quality of cotton:

- Farmers' Quality Concerns – A Status Survey : The farmers survey which was conducted as a part of this study revealed that the awareness about contamination problem is low (40%) and the practices followed in handling cotton at farm level themselves lead to contamination. The extent of adoption and non-adoption of suitable practices is highlighted in Table 4.4.

Table 4.4: Farm Practices in Handling Cotton*

Sl.No.	Handling Practice	Desirable practice	Undesirable Practice
1	Cotton Picking	Cotton cloth (43.3%)	Plastic (fertiliser bags) in combination with other materials (53.4%)
2	Storage	Separate storage (46.6%)	Open yard/part of residential premises (46.6%)
3	Covering cotton heaps during storage	Covered with cotton cloth (6.7%)	Not covered/Covered with fertiliser bags (70.0%)
4	Floor covering	Cotton cloth (3.3%)	None/Jute/Sand (96.7%)

* *Source: IRMA Farmers Survey.*

Although most of the farmers (60%) agree that relatively clean/better quality cotton fetches somewhat better price, they do not respond to this requirement for following reasons:

- lack of price rewards (6.7%)
- traders mix the produce from different farmers and therefore no need to clean (6.7%)
- labour intensive, costly and time consuming (23.3%)
- separate low quality produce (13.3%)
- take proper care at the time of plucking (13.3%)
- not required (36.7%)

This suggests that quality and cleanness of cotton has been one of the most neglected areas amongst the priority of the farmers.

- Price Dynamics – Linkages with Productivity and Quality: The low productivity of cotton seems to be the basic reason which leaves most of the farmers dissatisfied (86.7%) with the prices they receive from the market. The extent of this dissatisfaction is important considering the fact that prices of cotton in India are generally higher than the international prices. Moreover, our study observed declining trends in productivity (56.7%), probably due to lack of investments by the farmers in improving their production system. The impact of these frustrating opinions and actions were clearly reflected in the decline in area under cotton cultivation with the sample farmers from 327.5 to 219.0 ha (-33.0%) in a span of five years.

The sense of frustration was also evident when nearly 1/3rd of our study farmers reported that they have no way out to influence the price dynamics while a lesser number of farmers (16.7%) were experimenting with new varieties to improve productivity. A larger chunk (26.7%) of them were attempting to diversify and reduce the area under cotton cultivation. Further, the price deductions resorted by the traders, in the pretext of one or the other contamination added upto the overall frustration amongst cotton farmers.

The low productivity at the farm level, out-dated technology of ginning and pressing units coupled with problems of their viability are some important reasons preventing adequate effort and investments in promoting cleanliness and quality of cotton.

4.9.2 Trading and Handling Practices –Compromising Quality

The trading practices do not also seem to draw distinction nor reward good quality over bad quality. On the other hand, the current handling practices add up to quality problems.

- Firstly, doing away of cotton grading in the marketing yard has worsened the situation leading to farmers and collection traders indulging in malpractices like adulterating cotton with water, stones and foreign matter to increase the weight. This results in frequent disputes and renegotiation of price after the auction. Nearly 43.3% of our sample farmers reported renegotiation of price with the buyers due to contamination complaints after the completion of auction. Even the formation of trade association to deal with management committees of the marketing yards and seek re-addressal of this problem did not bring in much change in the situation.

- Secondly, the cotton arriving from farms is brought to the marketing yard or to private godowns for storage before moving the stocks to G&P units. This multiple handling increases the possibility of deterioration and adulteration. Further, due to lack of adequate and scientific storage facilities, cotton bales are stored in open places with adverse implication on quality. The industry experts feel that maximum contamination in cotton takes place during its transportation and storage. There is a need to improve the process of handling cotton at various stages either in the marketing yard or in ginning and pressing units. The mini-mission III under technology mission of cotton (TMC) is addressing this issue by bringing in desired improvements in marketing infrastructure.

- Thirdly, some of the ginning and pressing units and cotton traders mix different varieties by design to improve their profitability for a given transaction. The attempt is to fetch the price of the superior variety for the whole lot mixed with inferior variety. Such admixture lowers the quality of end product through reduction in staple length and non-uniformity of the staple. During our study we observed that some of the small traders mix the produce of many farmers to make it a transportable lot.

4.9.3 Multiplicity of Varieties

The number of varieties available for cultivation to farmers in case of cotton far exceed the requirement, resulting in serious quality problems due to mixing of varieties at the farm level. It is estimated that nearly 120 varieties are cultivated in the country with 20 varieties occupying 90 per cent of the acreage under cotton. The Satyam Committee report on textiles has made some suggestions in this regard which include enforcing cultivation of recommended varieties and creation of a National Cotton Council of India.

In the area covered under this study, it was observed that farmers categorised cotton varieties as traditional, certified and research. Our study sample farmers numbering 30 were cultivating around 16 varieties with 3 varieties (19%) categorised as local/traditional, 4 varieties (25%) as hybrid/certified and remaining 9 (56%) as research varieties. The phenomenon of availability of so-called 'research' varieties prevails due to extremely lax regulation which leads to value loss suffered by the cotton economy in the state. Surprisingly, the research varieties seem to be more popular with the farmers as compared to traditional or certified varieties and are major source of cotton

contamination in terms of staple length and count. The Mansa Taluka in Gandhinagar has achieved national prominence in cultivation of these research varieties. It was observed that these research varieties continued to have an edge over other traditional/hybrid varieties even with their inability to alter the low productivity levels of cotton.

Our study revealed that nearly 60% of the farmers select varieties based on their varietal traits like yield, ball size, staple length, resistance against insect pest and other crop husbandry requirements including labour. The next important factor (20%) in influencing choice of variety is marketability.

4.9.4 Technology and Technology Transfer

The farmers use different alternatives to dispose their produce, viz., through trader or cooperative society at village level, market yard and directly to G&P unit. Our sample study observed that the highest transaction was through marketing yard (46.7%) followed by cooperatives (16.7%) and village trader (10.0%). The remaining farmers (26.6%) used multiple sources including state agencies to dispose off their produce. Given the problems of low productivity, poor quality and price volatility, only meaningful technology transfer can help to improve the situation in each of these areas. With this background, the study made an attempt to understand the current status of technology transfer and extent and nature of effort being made by three major procurement agencies, viz., private, government and cooperatives.

The technology transfer inquiry covered two aspects, viz., supply of agricultural inputs and extension inputs. The farmers' dependence on various agencies for sourcing different inputs is presented in Table 4.5.

Table 4.5: Sourcing of Agro and Extension Inputs by Farmers

Agro Input		Extension Input	
Input	**Agency ***	**Input**	**Agency**
Seed	Private dealers (33.3%) Coop & State agencies (30.0%) Fellow farmers (13.3%)	General awareness	Coop & State agencies (43.3%) Fellow farmers (16.7%) Self (16.7%)
Fertiliser	Coop & State agencies (83.3%)	Production technology	Coop & State agencies (36.7%) Fellow farmers (23.3%)
Insecticide	Private dealers (76.7%)	Market information	Media (36.7%) Fellow farmers (16.7%)
Irrigation	Self (33.3%) Fellow farmers (16.7%)	Problem solving	Coop & State agencies (40.0%) Fellow farmers (16.7%)

** Parenthesis indicate proportion of total farmers dependent on an agency*

The above spread of farmers across agencies indicates relatively greater dependence of cotton farmers on cooperatives and state agencies with a few exceptions like purchase of insecticides and seeds. The traders/ G&P units who constitute the main procurement agency have hardly done anything in terms of establishing backward linkages with the farmers. This suggests varying degree of integration between farmers and procurement agencies. It is for this reason that the study went on to analyse the degree of backward linkages established by each of the procurement agency.

4.10 Issues and Inferences

The cotton economy of the country is too important to be ignored in any manner. The cotton constitutes an important raw material for the textile industry which contributes 5 percent of the GDP, 14 percent to India's industrial production and accounts for nearly 1/3rd of the country's export earnings which are targeted to touch US$ 50 billion by 2010. Under such circumstances, there is a need to gear up adequate supply of quality cotton at reasonable prices to the textile industry. However, in reality India has become net importer of cotton from its status as net exporter in the recent past due to availability of quality cotton in the international market at prices lower than Indian markets.

4.10.1 Constraints in Stepping up Domestic Cotton Supplies

The inability of the farm sector to meet the growing demand of textile industry in terms of quantity and quality is a matter of concern. Even with a production of nearly 158 lakh bales in 2001-2002, the industry is expected to import around 22 lakh bales during the current season. In fact India has been importing over two million bales per annum for quite some time to meet the short fall in industry's requirement. The imports are likely to go further, if the projected cotton requirement goes up to 205 lakh bales by 2004-05 as projected by the South India Textile Research Association (SITRA). A recent report prepared by the CII for Punjab Government observes, "As India is trying to increase its share in the global textile market from 4 per cent to 10 per cent in the next 10 years, there will be a surge in demand for raw cotton from the state." Further the report points out that in India, cotton imports attract 10 per cent customs duty. Adding miscellaneous expenses the landed-price of imported cotton is 15 per cent higher than the original import price. The CII feels if raw cotton is available domestically in sufficient quantity, import of the commodity will go down and industry will have greater flexibility on the price front. While pointing out that the area under

cotton cultivation in Punjab has declined from 7.14 lakh ha. in 1990-91 to 4.71 lakh ha. in 2000-01, it has urged the state government to take immediate steps to set up the special economic zone (SEZ) for textiles and initiate steps to ensure steady supply of quality seeds and undertake quality research.

4.10.1.1 Upscaling Quality

Similarly, a report recently prepared by the management consultancy firm, McKinsey and Co., on behalf of the Cotton Textiles Promotion Council (Texprocil) observes that India is rapidly forfeiting the cost advantage its manufacturers have in home-grown cotton because of high levels of contamination, poor quality of cotton seeds and low productivity. The nature and extent of specific problems in each of these areas have emerged clearly during the survey and have been detailed in the previous sub-section of this report.

As brought out by the McKinsey report and many other reports prepared with reference to the quality of cotton indicate that the industry faces two major quality problems, viz., 'high contamination' and 'false packing'. The industry experts suggest that Indian cotton is relatively clean (barring extra cotton plant parts) at the picking stage when compared to developed countries like Australia and USA where it is picked by machine and therefore requires pre and post cleaning. However, in India contamination starts during multiple handlings in transport, marketing yard and ginnery which makes the end product (cotton bales) dull besides getting contaminated. The time and energy required to clean our cotton at the mill site acts as a deterrent for our industry to go for indigenous cotton. This is one of the essential reasons why external cotton is preferred by the industry.

4.10.1.2 Vertical Coordination

In order to understand the problem of increasing gap between domestic demand and supply of raw cotton, an in-depth analysis of the textile industry reveals that the industry is characterised by numerous participants, viz., cotton production and ginning, synthetic fibre, spinning, weaving and composite mill. Further, the industry structure is fragmented with certain strong sectors such as spinning trying to survive with weak areas like processing which act as bottlenecks in the overall development of the textile industry. The textile industry which has been primarily manufacturing driven has ignored the development of cotton production and ginning sector. During the course

of our study, it was observed that some of the textile mills have taken initiative to reduce contamination at ginnery level with practically no efforts at the farmer level. Similarly the ginners-cum-traders have not made any noticeable attempt to influence the farmers through measures which can control contamination during picking, handling, storage or transportation. The other procurement agencies representing the cooperative (GUJCOT) and the state (CCI) sector seem to be making some efforts to control contamination at farm level though inadequate by any standard.

4.10.1.3 Need for New Initiatives

With growing concerns regarding domestic availability of raw cotton in sufficient quantity and quality in future, efforts have been initiated to rectify this imbalance and allow the cotton production and ginning sector to achieve parity with other sectors of the textile industry. Some of the initiatives in this direction include project DCH (Dharward Cotton Hybrid – 32) by the ginners in Badnawar in Dhar district in Madhya Pradesh, to promote suitable varieties of cotton, promotion of organic farming in Vidarbha region under Vidarbha Cotton Growers Association (VCGA), GOI approval to cultivation of Bt cotton, contamination removal drive at the ginnery level by some of the textile firms and launch of TMC with four mini-missions including integrated cotton cultivation. The overall objective of these efforts seems to be:

- to promote linkages between various sectors of textile industry particularly with cotton production and ginning sector, and
- to develop a strong raw material base for the Indian textile industry.
- Project DCH-32: The textiles made of DCH cotton are very popular in international markets. However, the area under DCH variety of cotton has fallen by about 70% in Tamil Nadu and 50% in Karnataka, the two major States growing DCH variety of cotton. This was attributed to farmer's preference for short staple varieties having a lower gestation period and lower production costs. On the other hand, the quality of DCH cotton from MP in 1999-2000 was not upto the desired levels due to various reasons such as poor quality seeds with low germination and maturity levels. Hence, the project DCH has been initiated in 2000 by Cotton Association of Badnawar consisting of 15 ginners of Badnawar in district Dhar in Madhya Pradesh involving 3000 farmers cultivating DCH-32 in and around Badnawar. The association organised pure seed of

DCH-32 to farmers at a discounted rate through CCI with a condition that these cotton farmers have to sell their produce in the market yard at Badnawar in open auction. In the second stage the association envisages that the Cotton Market Yard should evolve as an A to Z cotton care centre under one roof. The other important ingredient of the project is to frame a minimum price guarantee scheme for the farmers in the initial stages with the concurrence of the textile mills using DCH variety. Thus the Project DCH aims at assuring various benefits to all the players of the cotton and textile industries including farmers, traders, marketing yard, ginners and textile mills.

- Organic Farming: Cotton is being grown organically in the Vidarbha region under Vidarbha Cotton Growers Association (VCGA). The VCGA has tied up with the international agencies and more than 1000 bales of cotton are being exported. But certification of organic cotton by Indian agencies has not started yet. International agencies visit the farms, certify that cotton is organically grown and then import it. The Maharashtra Cotton Growers Federation is also helping in export of this product and farmers get premium of more than Rs.300 per quintal for organically grown cotton.

- Bt Cotton: The Bt cotton is genetically modified cotton. It has the capacity to withstand the onslaught of pests. To that extent, significantly lower quantities of pesticides would need to be used in the upkeep of the crop. Equally importantly, Bt cotton helps improve cotton productivity substantially. Some estimates put this figure at as high as 30%. Higher productivity combined with low cost of production holds great potential for the industry as it can help slash costs and make Indian cotton textiles significantly more competitive in world markets.

- Integrated Cotton Cultivation (ICC): Under TMC, an effort is being made through integrated cotton cultivation (contract farming) to achieve appropriate linkages within the textile sector. This means creating effective and efficient linkages between the end users of cotton and growers with ginner/trader acting as crucial intermediary. The system would be on the same lines as that adopted in the sugar sector. The state-owned Cotton Corporation of India (CCI) has been appointed as the nodal agency to implement the contract farming by signing MoU with farmers for integrated cotton cultivation. The contract farming is expected to benefit the

cotton farming community by making available quality seeds, pesticides on the one hand and also enable the textile mills obtain the desired quality of cotton. Ginning units would act as the nodal points to the farmers in their catchments areas. To begin with, the CCI has taken up four projects of integrated cotton cultivation (contract farming), one in Adilabad district of Andhra Pradesh and the other three in Madhya Pradesh, Gujarat and Orissa by forming farmers' group.

- Contract Farming Model – An Illustration : In the meantime, APPACHI Cotton Company, a cotton ginning and trading house in Pollachi in Tamil Nadu has unveiled a working model of contract farming for cotton. The model cotton contract farming titled 'Farm to fashion: A win-win formula' which offers scope for a 'back-to-back' agreement between cotton farmers and mills seeking specified cotton varieties, with ginning firms acting as the coordinating agency. The ginning firm will identify and negotiate with a *prospective mill on the quantity/quality of cotton they require with* no price fixation, which will be decided at the time of arrival of seed cotton. Similarly, it will also identify farmers willing to take up cotton farming in an identified locality to grow the agreed variety of cotton. The prospective farmers would be registered through an MoU after assessment of their compatibility to the task and here again, no price for their final produce would be fixed which would be kept open-ended. The price depends on the prevailing market condition at the time of arrival of the seed cotton.

The ginning firms would help the farmers coming under the contract to avail of bank finance for inputs to raise cotton. The finance will be input-specific which could be drawn from only specified input shops on a 'credit' basis as per the ginning firms' advices. Cotton credit card system with a pre-determined credit limits fixed to the farmer groups could be introduced. The Appachi Cotton's contract farming formula which focuses on special cotton crop insurance to be negotiated with insurance companies will rope in farmers service centres (FSC) run by leading agri-business companies at national level. These firms will act as the agencies for transfer of technology to farmers on crop management practices, pest management and farm equipment supply on a shared basis and their service charges would be negotiated.

The above initiatives are likely to contain levels of contamination and meet the requirements of the textile industry in terms of quality. It is

claimed that the levels of cotton contamination had witnessed a decline in ginning and pressing units that went in for modernisation under the TMC programme. Compared to 7-8 per cent trash content in the cotton, they were found to be lower up to 3 per cent now. This has to be further reduced to just 1 per cent.

The case study clearly brings out that various sectors of the textile industry are moving towards coordination and a robust framework for the same is yet to emerge. Although adequate care is being taken to address the problem of cleanness of Indian cotton, but the larger issue of productivity and in turn cost competitiveness of the Indian textile industry based on domestic raw material has not been fully addressed in the current initiatives. In fact the critical issues which will have to be addressed include the following:

- Improvement in productivity through improvement in quality of husbandry and greater investments in development of better yielding varieties.
- Improvement in cost competitiveness of the textile industry by maintaining parity between domestic and international prices. The improvement in productivity is going to play an important role in achieving this objective.
- The farmers preference for short and medium staple variety as against long staple cotton has to be addressed if it leads to mismatches between demand and supply.

In order to address these issues, the textile mills as end-users will have to play a more proactive role in addressing cotton production-related issues. Establishing backward linkage will surely benefit the industry by helping it access quality raw material and add to its competitive strength. Further, the active participation of market functionaries would catalyse the process to achieve success in quick time.

CHAPTER 5

KERALA HORTICULTURE DEVELOPMENT PROGRAMME (KHDP) - A CASE STUDY

5.0 Introduction

The Kerala Horticulture Development Programme (KHDP) was initiated in November 1993 after signing of a 'financing agreement' between the European Union (EU) and Government of India (GOI) in early 1992. The objectives of the programme were:

- To give the farmers in the Kerala State supplementary income by scientific management of high-value horticultural crops,
- To ensure that farmers' income is improved by value addition through the development of an agro-processing industry and by strengthening the link with marketing institutions for the fresh fruits and vegetable, and
- Provide a replicable methodology to make fruits and vegetable crops an important sector in Kerala's agriculture production pattern.

It will be appropriate to mention here that Kerala imports around 80% of its fruits and vegetable requirements primarily from its neighbouring states. In view of this dependency the larger objective of the programme was to develop a replicable model for horticulture development to influence diversification of Kerala agriculture. The programme was primarily directed to benefit small farmers and lease land cultivators. In terms of its scope, the programme envisaged to cover 35000 farmers, 8-9 important vegetables and three fruit crops viz., banana, pineapple and mango grown in Kerala. The over all output targets of the programme aimed at bringing 12,030 ha. under its fold with corresponding production of around 2,45,000MT of horticulture produce in five years. The total project outlay was Rs.131.45 crores.

The reasons which make KHDP an interesting case study include the size of the programme, its holistic nature and flexibility to impart changes whenever and wherever necessary during the course of programme implementation. As indicated above, the programme was unique in terms of the size of the intervention with regard to number of farmers and acreage covered which was spread over seven districts of Kerala and that too without any subsidy.

5.1. Conceptualisation of KHDP

The attractive feature of the programme was its conceptualisation, which aimed at integrating three main components of agricultural development i.e., production, R&D and markets. In this direction, the programme explored ways and means to integrate farming community, particularly small farmers, the market and the State in the emerging economic system. More importantly, KHDP has evolved and continues to evolve new institutional mechanisms and their linkages towards developing a fruitful partnership between the farmers, the markets and the State. The organisation of farmers through Self Help Groups (SHGs) and adoption of ideas such as Participatory Technology Development (PTD) as a substitute for institutional research findings were some of the important and innovative institutional interventions. Some other innovative interventions include office-less extension system, farmers markets (known as field centres), etc. These innovations were possible because of the flexibility available in programme implementation for changing the type and nature of interventions as and when problems were encountered.

This proved to be the most creative and unique feature of the programme considering the existence of a framework of the programme both in terms of its organisation and activities in the original 'financing agreement'. Some of the institutional interventions which underwent change include - the proposed specialised fruit and vegetable co-operatives were replaced with informal institutional structure in the form of Self Help Groups (SHGs) consisting of 10 to 30 farmers in the neighbourhood and replacement of State Co-operative Banks with Commercial Banks for delivery of credit to SHG members. In fact during the process of evolution, the programme seems to have gradually moved from a multi-functional and multi-institutional effort into a dominantly multi-functional effort of the KHDP. In other words, KHDP took upon itself to coordinate a number of functions like research, credit etc. rather than other institutions directly performing their functions. The evolution process suggests that organising marketing proved to be the biggest challenge and obviously the most critical component in achieving sustainability of this unprecedented developmental effort.

In nutshell, the programme envisaged promoting backward linkages through numerous production-related interventions and forward linkages through marketing of fresh produce and vertical linkages through agro-processing. In the process of developing these linkages, the KHDP has built two horticulture development models:

- The first model which is being referred as 'Farmers Market Model' deals with marketing of fresh produce of the SHGs.

- The second model referred as 'Farmer Factory Linkage Model' deals with processing and marketing of horticulture produce.

The first model seemed to be a new initiative and much different than the earlier initiatives while the second model was a refinement over existing contract farming models to suit local conditions. This case study attempts to highlight the salient features of both these models.

The programme was initially expected to be completed in six years and will culminate with the formation of an organisation called Kerala Horticulture Development Council (KHDC) which would carry forward the works initiated by KHDP. Later, the programme was extended for another two years and finally came to an end on 31st December 2001 with the formation of Vegetable and Fruit Promotion Council Keralam (VFPCK) as an independent Company registered under Section 25 of the Indian Companies Act, 1956. The objective of the newly formed company is to create a sustainable successor organisation to the KHDP which has already made spectacular changes in the Vegetable and Fruit sector in the State of Kerala and has won accolades as one of the best External Aided Projects in India.

5.2 Methodology

Most of the information for this case study was generated during IRMA's association with KHDP. The assignment for KHDP included "In-depth Appraisal of the Kerala Horticulture Development Programme - Part I and Part II" during the period 1998-99 followed by the Phase II assignment during 1999-2000.

In the first phase, Study team conceptualised and apprised various components of the programme like appropriateness of SHGs as organisational structure for mobilising collective action by the farmers, efficacy of the research and training programmes, marketing institutions and linkages and their efficacy, etc. The detailed understanding of 'Farmers Market Model' was developed during the course of this study. The part II primarily focused on developing farm-factory linkages for the pineapple processing factory, which was undergoing trial runs at the time of the study. The 'Farmer Factory Linkage Model' was conceptualised during the course of this study.

The Phase II of the study attempted to address some of the important issues like implementation of Command Area Development Programme (CADP) for growing pineapple varieties suitable for processing, farmer's opinion on modalities of contract farming of pineapple and ownership pattern of the factory. In this connection, an opinion survey covering 32 farmers in five village panchayats around Nadukkara Agro-Processing Company (NAPC) was conducted through a structured questionnaire to understand farmers' problems with respect to pineapple cultivation and their readiness to enter into a contract agreement to grow and supply pineapples to the factory.

The other assignments and studies on KHDP which contributed to preparation of this case study include 'action project' and 'theme papers' prepared by IRMA students as a part of their Management Traineeship Segment during the year 1999-2000 on subjects like 'Package of Practices of Pineapple Farmers', 'Economies of Pineapple Cultivation' and 'Farmer Trader Linkage' in Vazhakulam Pineapple Market. The information obtained from all the above sources and studies has been integrated in the preparation of this case study and towards elaboration of marketing models developed as a part of this programme.

5.3 KHDP – The Organisation

The KHDP framework has two important dimensions, viz., conceptual and organisational. The conceptual component explains the 'strategic orientation' of the programme while the organisational component explains the 'structural configuration' of the programme.

5.3.1 KHDP – Structural Configuration

The implementation of the programme was proposed through pilot project approach to be implemented by an independent agency - Kerala Horticulture Development Programme (KHDP). The programme envisaged setting up of **eight pilot projects - six for fresh horticulture products** to be located within a radius of 15-20 km of the EEC financed wholesale markets already under implementation through 'Agricultural Markets' project. The idea was to channelise the vegetable production from these pilot projects to regulated wholesale markets for consumption in the urban areas of Kerala. However, this locational restriction was withdrawn due to delay in implementation of 'Agricultural Markets' project. One of the pilot projects was proposed for **seed multiplication** and another for supply of fruits to

the **agro-processing factory** proposed in Muvattupuzha. The programme plan also provided for evolution of comprehensive organisational structure to supersede the arrangement created during the implementation of the programme. In this context, the Kerala Horticulture Development Programme (KHDP) and Agro-food Processing Factory will give way to Kerala Horticulture Promotion Council (KHPC) and Kerala Agriculture Processing Co. (KAPC) respectively, before the end of the programme. However, the programme organisation underwent a number of changes from time to time and the structure which emerged is shown in Fig. 5.1.

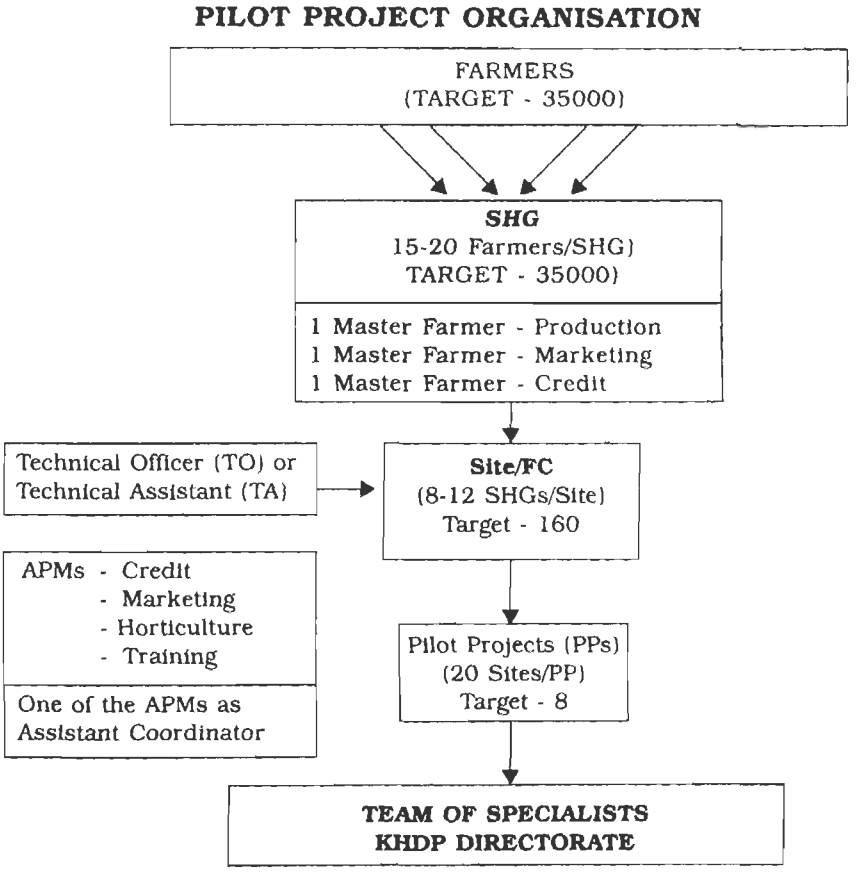

Fig. 5.1: Macro Model - KHDP and Its Linkages with Farmer Organisations

The programme organisation at grass root begins with informal organisation of farmers popularly known as Self Help Group (SHG). The activities of SHGs are managed by farmers themselves with three

Master Farmers (MFs), viz., Credit, Production and Marketing providing leadership and performing important tasks for the membership.

Next level is called 'Site' consisting of a group of 8-12 SHGs. The KHDP's assistance starts at this level through technical staff (technical offer/technical assistant) who facilitate multiplicity of tasks for SHGs. The next level in organisation is Pilot Project covering around 20 'Sites'. At this level, KHDP support becomes more specific and is overseen by four senior/middle level personnel with specialisation in Horticulture, Credit, Marketing and Training.

Further up in the hierarchy are Specialists who plan and co-ordinate implementation of these activities at the programme level. The Project Director, who guides overall administration of the programme, heads the KHDP Directorate.

5.3.2 KHDP - Coverage

The eight pilot projects of the programme were located in various parts of Kerala. The fresh vegetable pilot projects covered the districts of Thiruvanathapuram, Kottayam, Ernakulam, Trichur, Palghat, Malappuram and Calicut. The seed production pilot project was located at Alathur (Palghat district) while the agro-processing pilot project (factory) was located at Muvattupuzha (Ernakulam district). The raw material for the factory was planned to be sourced from Ernakulam (pineapple) and Palghat (mango).

5.4 KHDP: Farmer Market Linkages

As already indicated in the process of developing farmer-market linkages, KHDP succeeded in building an innovative 'Farmers Market Model' for marketing fresh horticulture produce. However, the attempts to build a 'Farmer Factory Linkage Model' for processing and marketing of horticulture produce based on contract farming in pineapple proved to be much more complex. Both these models with relevant details are presented below:

5.4.1 Farmers Market Model

The model was operationalised by organisation of farmers at two levels viz., as Self Help Groups (SHGs) at grass root level for organising production and at Field Centres (FCs) level for organising marketing of fresh horticulture produce. The concepts and key interventions as adopted in this model have been depicted in Fig. 5.2.

5.4.1.1 Core Concept

The figure clearly depicts that the SHGs were upgraded to broad base their functions from their traditional 'thrift and credit' activity to 'production' of horticulture crops. This upgradation represents the core concept of KHDP model (Fig.5.2).

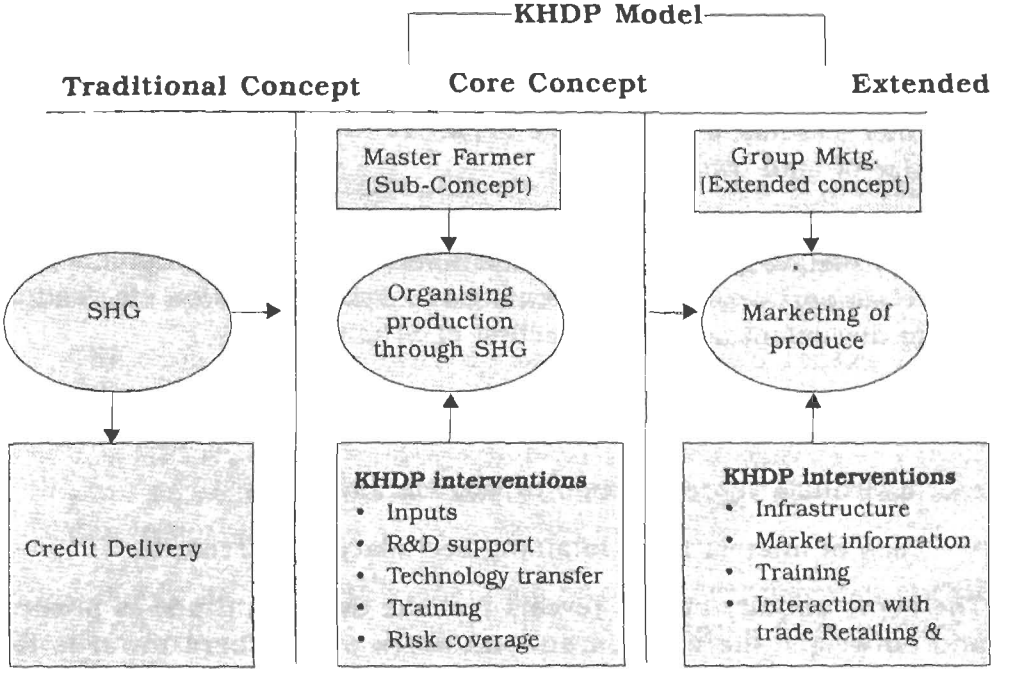

Fig. 5.2: Farmers Market Model as Adopted in KHDP

The importance of this core concept was adequately reflected during exploratory research conducted with the SHG members. The majority of the SHG members contacted during the field research, representing 23 selected SHGs spread over four pilot projects expressed that following benefits have accrued to them as members of SHG:

- Access to credit, agricultural technology, information and markets.
- Sharing information and learning from each other in an atmosphere of co-operation rather than competition.
- More opportunities for mutual interaction leading to organised and shared learning.
- Spirit of analysing problems and evolving solutions as a group.
- Sharing of resources like irrigation, pesticide spraying etc.

The above responses are in conformity with the observations made by Wrol Alderson of 'functionalist' (total system structure) school of marketing thought who stated that "In an organised behaviour system the organising element is the expectation of the members that they as members of the system will achieve surplus beyond what they could attain through individual and independent action" (1985).

On the other hand, the limitations expressed were far and few and can be categorised as below:

- Interpersonal problems due to differences in age, education and size of land ownership etc.
- Some SHGs have drafted governance rules of their own to enforce and sustain group interest while others have created common fund to support certain group activities like transportation etc. leading to discontent amongst a section of SHG members,
- Infrequent meetings and thereby inadequate interaction between members,
- Inadequate representation to women, and
- Lack of interest in maintaining necessary SHG records.

The above enquiry clearly reveals that the overall attitude is positive and outweighs the unfavourable attitudes of members towards the concept of SHG. Given the positive inclination towards the concept of SHGs, it is expected that members of SHGs would act to preserve the system, if the system stability is threatened from within. Therefore, some of the SHGs framing their own rules" to manage internal dynamics should not be a cause of concern. Even in informal settings like SHG, there have to be rules for membership, allocation of responsibilities and criteria for measurement of output. During the period of our field research, the KHDP has already introduced women's participation as a new focus area and 1308 women members were enrolled.

5.4.1.2 Master Farmer (MF) as Secondary Concept

The Master Farmer (MF) is a secondary or a sub-concept of the core concept of SHG. In other words, this sub-concept is a part SHG 'rules', which determine the assignment of duties within the system. In the context of KHDP, the major responsibilities of production, credit and marketing were assigned to 3 members of SHG called as Master

Farmers (MFs). As per the KHDP guidelines, the members themselves must select three MFs for each SHG. Ideally, MF should be enterprising and capable of acquiring role and responsibilities of a trend setter for the SHG. Further, the assumption is that the necessary leadership qualities and competence can be built through appropriate training. In turn these trained MFs are expected to impart training to other members of SHG and co-ordinate core activities assigned to them. The Farmer-to-Farmer approach is presumed to be relatively more effective in dissemination of technology/knowledge and skills as compared to traditional method of extension personnel-to-farmer.

The study tried to look more closely into the efficacy of this concept. Nearly 21 Master Farmers (15 MF Prod., 2 MF Credit and 4 MF Marketing) were interviewed covering relevant issues. The qualitative inferences drawn from these responses are:

- The three MFs in a SHG do not seem to have similar level of influence on members.
- The MFs (production) seems to have occupied centre stage and in some cases at the cost of MFs (credit, Marketing). This is probably due to scope of his day to day responsibilities
- The MFs are expected to maintain records like attendance register of meetings, minute book etc. This is not being done in most of the cases.
- The ability of MFs to act as trend setters have not been fully realised.
- The leadership qualities to carry their roles and ability to give direction to group in problem solving needs to be sharpened further.
- The idea of one of the MFs acting, as spokesperson for the SHG and liaisioning with KHDP seems to be absent.

Despite of these limitations, the MF concept is effectively translating into gains for SHG members. We recognise that the concept has some inherent limitations, which are imposed by the selection of MF by SHG members. The MF so chosen may not have inherent leadership/ competence capabilities, which can only be overcome in part through training. It is therefore important for the KHDP to not only impart one time basic training to build leadership qualities but occasionally reinforce through more objective training.

5.4.1.3 Master Farmer Concept – Performance Evaluation

In spite of the inherent and operational limitations of the MF concept, it's overall success in catalysing the SHG performance was beyond doubt. One of the major inputs, which can enhance the efficacy of the MF concept, is training. Our study evaluated two important interfaces of the MF training viz., KHDP to MF and MF to Farmers. In both the interfaces a number of deficiencies were observed which seem to require moderate corrective effort. Some of the deficiencies include:

- High variability in involvement of the MFs in receiving training
- MF (production) received more rigorous training as compared to other MFs, viz., credit and marketing
- lack of specialised input to build leadership quality

In the MF- farmer interface the information exchange between MF and SHG members was dominantly taking place in informal settings like SHG meetings, house visits, field visits, one-to-one contact etc., and formal training schedules as envisaged in KHDP guidelines are not fully practised. The other problems in this interface include:

- credibility problems with SHG members
- Lack of confidence in discharging their responsibilities and feeling that only KHDP is the competence agency to undertake this function.

5.4.1.4 Extended Concept – Group Marketing

In the KHDP model, the core SHG concept was extended to organise group marketing (Fig. 5.2). The evolution of the group marketing structure probably went through maximum number of modifications, both structural and operational, as compared to any other concept or sub-concept in KHDP model. Under the group marketing arrangements, the Field Centres (FCs) were formed with participation of 10-15 SHGs representing 200-250 farmers. The justification extended by KHDP in favouring small FCs is described below:

- The small FCs are more representative of the SHGs.
- The FC committee and staff can directly interact and communicate with the SHG members thus improving efficacy of communication and in turn reducing room for conflicts.
- The transactions are perceived to be more transparent as they are held in the presence of the members.

5.4.1.5 Structural Configuration of FCs

The very idea of FCs originated from the initial proposal of 'bulking point' – where members from nearby SHGs would bulk their produce. The bulked or pooled lot of vegetable and fruits will be taken to the nearest traditional markets. The thinking was that such bulking will enhance the negotiating power of the farmers by providing desired economies of scale. While conducting this operation, it was realised that it is possible to avoid the transportation expenses if traders could be invited to buy directly from the bulking point. In this way, the concept of a Field Centre was born, which is a farmer run market located close to the farms. It also helped to reduce the length of marketing channel as shown below:

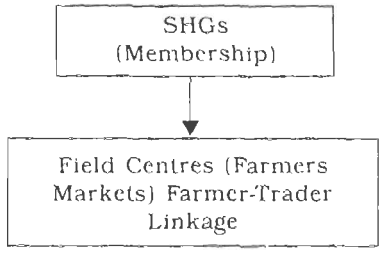

Fig. 5.3: Farmer Market Model

The Farmer Market Model benefited farmers in terms of proximity and thereby saving in time and cost, transparency in transactions and reduction in marketing commission. Those SHG members who wish to become the members of the FCs are required to contribute a sum of Rs.100 to 200 and this money is used as capital to run the FCs. Some of the FCs on their own enlarged the concept of FC to include 'input centre' to facilitate the availability of pesticides and fertilisers to SHG members. In spite of innumerable problems to begin with KHDP was able to set up 77 FCs (farmer markets) during the life span of the programme. Most of them are now in the midst of getting registered as Swarsya Karshaka Samitis (SKSs) under the Charitable Societies Act.

5.4.1.6 Management of FCs

A committee consisting of MFs (Marketing) representing each participating SHG undertakes the management of the FCs. The committee elects its convenor on yearly rotation basis to coordinate activities of the FC. The Committee meets once a week or fortnight to review the functioning of FC and takes decisions. The proceedings of

the committee need to be recorded. The FC also employs a full time secretary to manage day-to-day affairs and maintain books and records of the FC. The KHDP provided budgetary support to the extent of Rs.13.89 lakh/Field Centre (towards land, building, crates, computers etc.) including Revolving Fund of Rs.93,000 towards working capital. A uniform accounting system, developed by KHDP with expert advice is being introduced to make accounting more transparent. In addition, auditing has been made compulsory for all FCs.

5.4.1.7 Dissemination of Market Information and Development Support

The KHDP provides training to MFs (Marketing) in marketing and to SHG farmers in general in Post-Harvesting Handling (PHH) of fresh produce. The farmers are also provided price information on day-to-day basis to facilitate marketing decision. This information is based on 15 wholesale markets (10 within state and 5 outside state) for 32 vegetables and fruits (29 and 3 respectively) and is disseminated through AIR, newspapers and cable TV network. KHDP also provides weekly and seasonal trend analysis in prices. Further, KHDP activities included - mobilisation of traders visiting FCs, trade directory containing list and contact or private traders, market research, market development through generic advertising to promote use of vegetables, retailing by FCs and input marketing.

5.4.1.8 Field Centres – Concept Evaluation

The evaluation is based on functioning of 4 FCs and some of the observations made by respondents are:

- All the SHG members contacted were convinced that easy market access through FCs saves considerable time, transportation cost and marketing commission (5 percent in FC as compared to 10 percent in the market place).
- Knowledge of market prices improves negotiating/bargaining ability of the farmers with the traders who visit these FCs.

As against the above advantages, a number of limitations of group marketing as expressed by respondents are:

- All the SHG members are not convinced about the benefit of group marketing and in turn FCs.
- The prices still fluctuate widely due to the uncertain demand and influx of cheaper vegetables from neighbouring states.

- The traders come to FCs with pre-determined prices which restricts their bargaining power.
- Farmers compare between FC and market prices before deciding to sell their produce.
- Ironically, when all the farmers use FC facility, the prices sometimes come down due to excess supplies.

Amongst the operational limitations, two observations made by MF (Marketing) are note-worthy.

- The price information does not reach farmers in time.
- The working capital (accumulated through commissions) is not adequate to meet the level of credit facility demanded by the traders. This delays the payment to members by 5-8 days, which makes them suspicious and unhappy.

5.4.1.9 Concept Application and Consolidation

- The KHDP model is unique in terms of its key interventions and 'holistic' concept. The study noted dominantly positive inclination of the beneficiaries towards the SHG concept including that of women members.
- The Master Farmers (MFs) concept essentially attempts to build on "amongst us" type of leadership, which is expected to be more sensitive to the needs of SHG membership. Additionally, the concept helps in better articulation of problems of the beneficiaries and imparts speed to key interventions of the programme. The concept is effectively translating itself into gains through informal interactions between MFs and SHG members.
- The Group Marketing Concept through Field Centres (FCs) seems to have mixed impact. Firstly, due to frequent changes in operationalising the concept; the progress made in establishing FCs has been slow. Secondly SHG members are not fully convinced that FCs improve their bargaining power. However, they believe that FCs saves them the transportation cost and time. So far only 4 per cent of vegetables and banana produced in the project are being channelised through FCs. The market information system of providing daily prices suffers from time lag and some of the FCs has made their own arrangement to obtain daily prices.

The application of the group concept and the farmer market model as shown in Figure 5.3 suggest that the model can be consolidated further in terms of important components and sub-components of the programme. Some of the suggestions which emerged as a part of the study are:

- The study brings out the need for a robust framework to measure and monitor the health of SHGs on continuous basis using Key Performance Areas (KPAs). The five KPAs suggested for the purpose included:

  1. Group sustenance
  2. Maintenance of records
  3. Farm practices
  4. Joint ventures
  5. Marketing and Price realisation

This will facilitate to develop 'prescription' for SHGs, if performance of some of the SHGs deteriorates at a later date.

- The MF concept also faces complex issues to realise its full potential namely - inadequate competence and motivation, credibility of MFs, rotating responsibility and honorarium for the services rendered. Keeping in view that the MF-Farmer training interface is most critical to the performance of SHGs, the MFs need to be tested for their competence to train fellow farmers. The training approach suggested under such situations needs to be flexible in terms of KHDP support to MFs as depicted in Fig. 5.4.

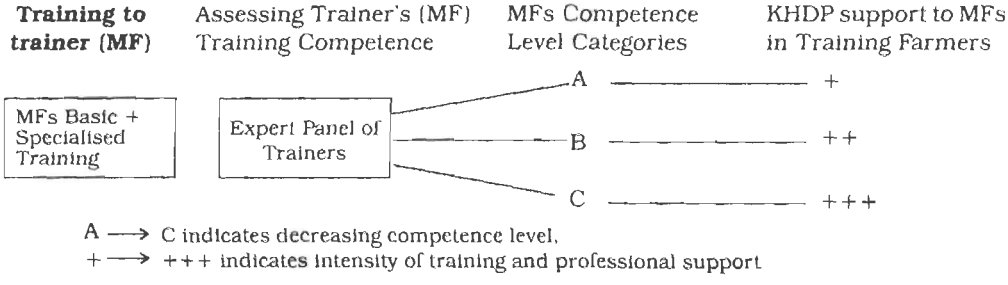

Fig. 5.4: Customised Training Approach for MF-Farmer Interface

Similarly, the other issues also need to be resolved in a gradual manner but the direction of effort to strengthen the concept should include - more objective training, need-based support to bridge competency gap and succession planning for smooth changeover of leadership.

- The performance of FCs reflects that initial response from the farmers was not encouraging. However, the relevance and utility of the concept can not be undermined considering its success in case of banana. The analysis attributed relatively higher success in case of banana, mainly due to economies of scale in supply, which in turn attracted enough buyers and enforced competition. It is observed that in absence of such competition, farmers' bargaining power has not improved in dominantly vegetable FCs. The other conditions, which also helped group marketing in banana, include - market potentiality and location of SHG. Unless similar conditions are created in case of vegetable FCs, besides overcoming operational problems as mentioned above, it will be difficult to achieve success in group marketing effort in vegetables. Number of other measures were suggested to improve participation and operational efficacy of FCs. These measures include - careful selection of the location preferably in proximity to demand pockets, assessment of local demand (consumer and institutional markets), economies of scale through joint operations between small and large FCs and promoting direct retailing through FCs and existing trade channels.

5.4.1.10 Farmer Market Model-Performance Evaluation

At the time of completion of this study in March 1999, KHDP has completed a little more than four years of its existence. The project continued till December 2001 leading to formation of the Vegetable & Fruit Promotion Council Keralam (VFPCK) as a sustainable organization of Kerala Horticulture Development Programme (KHDP). Between 1992 and 2001, KHDP made spectacular changes in the Vegetable and Fruit sector in the State of Kerala and has won accolades as one of the best External Aided Projects in India. The salient achievements of the Programme as on 31st December 2001 are summarized below :

- Around 40,958 Vegetable & Fruit farmers have been organized, trained, facilitated and empowered to undertake all activities in respect of vegetable & fruit sector ranging from cultivation to value addition and final marketing of produce. These farmers have been organized in 1886 Self Help Groups.
- Nearly 5442 Master Farmers (MFs) have been moulded from the above farmers who formed a highly trained and motivated cadre acting as a strong linkage between the organization and the beneficiaries.
- About 98 Farmer Markets have been set up in the operating districts enabling trading of the produce of the farmers at fair prices, resulting

in a better share of the prices to the producer. These markets together have an annual turnover of around Rs.50 Crores.

- A sum of Rs.46.76 Crores have been facilitated as Credit to the farmers through the participating banks.
- The average productivity of vegetables in the Pilot Project Areas of KHDP has risen from 8 to 12.80 Metric tonnes/ha., and in the case of fruits it has risen from 12 to 17.32 Metric tonnes/ha.
- A Seed Processing Plant has been set up for supplying quality seeds and planting materials to the beneficiary farmers.

5.5 Farmer Factory Linkage Model

The 'farmer-market model' detailed above has achieved considerable success in establishing a new group marketing model wherein farmers instead of going to the traditional markets and selling their fruit and vegetables individually to traders, now form their own market and get traders to come and buy from this market. The 'Farmer Factory Linkage Model' is extension of this concept which was applied in case of an agro-processing factory established as a part of KHDP. One of the important objectives was to ensure development, promotion and management of farmer oriented agri-business activities. In context of the local agricultural production, it was decided to set up a model processing factory as a major agri-business enterprise which will be owned by the farmers as the principal stakeholders. Initially this venture was known as Kerala Agro-Processing Company (KAPC), but was renamed later as Nadukkara Agro Processing Co. (NAPC) Ltd. and registered in December 1999. The NAPC is a modern factory for commercial processing of pineapple, mango and other fruits. The installed capacities for various type of raw materials is depicted in Table 5.1.

Table 5.1: Product-wise Plant and Nominal Capacities of NAPC Ltd

S. No.	Raw Material	Plant Capacity (Raw Material)	Output	Nominal Capacity (end-product)*
1	Pineapple	3.5 MT/hour (Decrowned)	Juice Concentrate (60° Brix)- 280 kg/hour	560 MT
2	Mango	2.0 MT/hour	Juice Concentrate (28° Brix) – 500 kg/hour	200 MT
3	Pineapple, Mango Papaya,	3.0 MT/batch (Pineapple)	Candied fruit 1.2 MT/batch in 48-72 hrs.	120 MT

** As defined in the financing agreement on the basis of 8 Hr./day for 300 days in a year*

The factory is located in the midst of pineapple growing area. The facility has been built at a cost of Rs.25.19 crores (interest @ 12.5% per annum) and has state-of-art equipment and processing technology. The three end-products are juice concentrate, ready-to-serve (RTS) drinks and candied fruit. The factory started production in December 1998 with raw material purchases sourced from open market.

5.5.1 NAPC and the Core Issues

The agro-processing facility now known as NAPC was set up to play an important part in KHDP's strategy to ensure that farmers eventually own a processing factory by becoming shareholders. The factory is supposed to provide supplementary income to the farmers through value addition to their produce. However, the issues which were important for the factory and KHDP and needed addressal were:

- Securing raw material supplies for the factory from local farmers

  Establishing mechanisms by which farmers can own the factory through shareholding

In this context, it will be interesting to go through the evolution of NAPC because the debate on this model still goes on – whether setting up this factory was a wise thing to do in the market conditions which prevailed in the heart of Kerala's pineapple growing area.

5.5.2 Sourcing Raw Material-Command Area Development (CAD) Approach

While conducting Farmer-Factory Linkage Study as a part of in-depth appraisal of the KHDP, it was observed that the fruit processing factory is likely to face serious problems in sourcing its major raw material i.e. pineapple for following reasons:

- Firstly, the current popular variety cultivated by growers is 'Mauritius' and is good for table purpose. This approach is being adopted considering the fact that NAPC would require special variety of pineapple ('Kew') which is superior to existing popular variety 'Mauritius' for processing. However, 'Kew' has gone out of cultivation in last 10-15 years due to lack of demand created by failure of local pineapple processing industry. Presently, its cultivation in Kerala is limited to a few pockets of traditional pineapple growing area and with few individual farmers. In fact obtaining suckers of 'Kew' for fresh planting in Kerala is

problematic. However, area under 'Kew' in Karnataka is increasing at a relatively rapid pace. In these circumstances, the KHDP fruit processing factory is likely to face, at least in near future, the problem of sourcing adequate quantities of 'Kew' from its vicinity.

- The second problem which emerged from observations made during the study was of market price of pineapple. It is necessary for the factory to source raw material at a price which is internationally competitive. The prevailing price of popular variety 'Mauritius' generally remains higher due to its demand for table purpose. The higher price obviously will make juice concentrate, manufactured by NAPC, non-competitive in the volatile international market.
- The third problem, which came to notice during trial runs was of the colour of the juice concentrate with the use of variety 'Mauritius' as raw material. The international market prefers light colour while the juice extracted out of 'Mauritius' is dark yellow and relatively less acceptable.

Considering these problems, it was suggested to Kerala Agro Processing Company (KAPC) to adopt the concept of command area development for promotion of 'Kew'. The broad features of the CAD programme suggested in the preliminary stages are described below:

Procurement Policy Framework – Long-term

- Adopt Command Area Development (CAD) concept to bring 350ha. under cultivation of 'Kew' through contract farming.
- The conceptual framework will be based on improving productivity, transfer of technology, credit delivery, buy-back arrangement and immediate payment.
- The CAD programme will have to be implemented in a phased manner – development of the concept, likely acceptance by the grower, refining the concept and finally its implementation in a phased manner spread over a period of 4 years.

The concept has to be designed taking into account existing short comings of the production and trading system. The growers will have to be convinced of the fact that such linkages will assure them better economic returns. However, this approach required further exercise to conceptualise, refine and prepare a blueprint for implementation of such programme in a phased manner.

5.5.3 NAPC Ownership and Shareholding

The financing agreement between GOI and GOK envisaged a pattern of ownership and shareholding i.e. "a company with a majority shareholding of the farmers". However, the events did not unfurl as planned. The decisions finalised with respect to KAPC during the tenure of this study were:

- It will dominantly serve the interests of pineapple farmers.
- Adoption of variety 'Kew' by the growers will be key to its success. A minimum command area of 350 ha will have to be brought under 'Kew' cultivation.

The above mentioned requirements led to evolution of the eligibility criteria for the **target farmer** and was defined as a **farmer willing to grow and supply 'Kew' variety to KAPC under a contractual agreement.** The study suggested that other criteria like acreage (say 1 acre/farmer) distance from the factory (15-20 km) can be added later after careful examination. This would mean registration of nearly 1000 farmers representing the constituency of pineapple growers. Considering the uncertainty about the other processing activities of KAPC, the study suggested the following composition of the Board as an interim arrangement till final scenario emerges about the scope of KAPC activities (Table 5.2).

Table 5.2: Constituency-wise Break-up of Board Positions

Constituency	No. of Board Positions
Pineapple Farmers	4
Other Farmers	3
GOK nominees	3
KAPC (CEO as Member-Secretary)	1
Total	**11**

The **target pineapple farmers** will occupy four positions on the board of KAPC. In this context, the KAPC should be as specific as possible in defining the registered farmers to avoid entry of vested interests on the Board on KAPC. In order to facilitate their representation and election, the pineapple growing area in the state (presently restricted

to five panchayats) can be sub-divided into four **territorial constituencies** (for the time being two of the smaller panchayats can be merged to form four constituencies from five panchayats). One farmer can be elected from each constituency. The delineation of these four constituencies can be reviewed from time to time based on the criteria of patronage to the factory by each of the five panchayats. The cooperatives also follow similar procedure to attain representation of growers on the Board. The other **three positions** representing the constituency of 'other farmers' can be temporarily filled from the pool of specialists in consultation with the Project Director, KHDP and the Managing Director, KAPC.

5.6 Command Area Development (CAD) - Development Phase

During the development phase a number of activities were undertaken to understand the problems which are likely to be encountered in developing command area which will ensure regular supplies of raw material to the factory. The important exercises undertaken during this phase included:

- An opinion survey covering 32 farmers in five village panchayats around Nadukkara Agro-Processing Company (NAPC) was conducted to assess the farmer's response to enter into an contract agreement to grow (variety 'Kew') and supply the same to the factory. The command area in geographical sense meant five panchayats, which have been traditionally growing pineapple.

  In fact 69 per cent of the 32 farmers indicated their willingness to enter into production-cum-marketing contract with the factory, because majority of the willing farmers (72%) felt that the very idea of contract farming is good to very good. The major terms which aroused positive opinion with regard to the contract included availability of loan (43.5%), assured price of Rs.3.50/kg (39%), yearly bonus benefits (26%) and assured market (22%). However, farmers preferred (61%) the price to be between Rs.4.50-Rs.5.00/ kg and observed that Rs.3.50/kg is not attractive. The remaining farmers (22%) were not willing to sign the contract because they felt the variety 'Mauritius' is more profitable than 'Kew'. The survey revealed that many farmers (40%) expect that 'insurance' cover should be a part of the contract package.

- The other assignments and studies conducted by IRMA students as a part of their Management Traineeship Segment covered 'Package of Practices of Pineapple Farmers', 'Economics of Pineapple

Cultivation' and 'Farmer Trader Linkage' in Vazhakulam pineapple market. The information obtained from all the above studies went into preparation of CAD plan.

- Scheduling of planting of 'Kew' to receive 63MT/day of pineapple (in the proportion of 80:20 through contract farming and open market purchase) was an important component of this study. The major problems envisaged in implementing the scheduling of factory arrivals was with regard to obtaining adequate suckers to achieve coverage of proposed area under 'Kew' variety and secondly that of switching by the farmers to 'Kew' variety.

- The preparation of framework of agreement between the NAPC and farmers, who are likely to be registered as shareholders, for production and supply of pineapple to the NAPC. The framework titled "Production-cum-Marketing Contract" was prepared after taking 'operational and legal' issues into account. In addition to this framework the procedures which were transparent enough were evolved to register the farmers subject to fulfillment of certain terms and condition. After registration, the farmers were expected to grow 0.5 acre pineapple (var. 'Kew') and supply the same to the factory as per the time schedule of the factory. The factory in turn will pay the sale proceeds to the grower at a pre-determinant price subject to fulfillment of the terms and condition of the written contract with regard to quantity, quality and time of delivery. In order to enforce the farmers to comply with the requirements of the contract a system of de-registration was evolved. In other words, the registered farmers can be temporarily or permanently de-registered for failing to fulfill the terms and conditions of the contract.

- Open farmer meetings/workshops between the factory personnel and the farmers in important villages like Nadukkara and Kalloorkkad.

- Action Research Project by the students of IRMA as a part of their Fieldwork Component to educate the farmers and improve the image of the factory which is currently not favourable amongst the growers in the proposed command area for following reasons:

    - Most of the growers feel that factory has been established to extend price support in case open market prices fall below a certain level.

    - In situation of price fall, the factory should also purchase all the pineapples brought to the factory.

- Some of the growers also feel that the factory should be able to absorb unlimited quantity of pineapple for processing and in turn, lead to increase in price in the open market.

Obviously, the NAPC seems to have got established in the midst of these contradictions. So far it could do little to control the heightened expectations of growers on two occasions during 1999 when pineapple prices fell sharply. It is necessary that NAPC need to educate pineapple growers in the following:

- Erase the wrong impressions created among growers about its role.
- The installed capacity can not have major influence on pineapple prices.
- Its requirement of pineapple is regular and it can not deal as interventionist agency in a situation of supply glut or price fall or both.

Such education, if succeeds will go a long way in smooth implementation of the proposed Command Area Development (CAD) programme. The modalities of the education campaign which was part of the action research project included:

- Discussion with pineapple growers individually or in group during field visit of students.
- Organising interaction between a group of pineapple growers and factory personnel.
- Prepare suitable educational material for circulation amongst pineapple growers in five panchayats. The educational material should have two components - one containing answers to growers' major concerns (Frequently Asked Questions - FAQ format) and the other strides made in pineapple cultivation in India and abroad vis-à-vis situation in Kerala.
- Organise visits of opinion leaders to the factory and interaction with factory personnel.

5.6.1 CAD Approach – Unresolved Issues

The efforts which were made in translating the CAD concept into action, resulted in improvement in understanding the issues involved in CAD implementation but at the same time it also became clear that the KAPC will find it difficult to negotiate the following :

- The KAPC may encounter serious problems in procuring the right variety of pineapple, i.e., 'Kew' for following reasons:

    - The open market price for pineapple fruits remains consistently higher and some times it can go substantially higher than the NAPC offer of Rs.3.50/kg. The disparity in pricing between 'Mauritius' and 'Kew' is primarily dictated by demand and supply. Firstly, the variety 'Mauritius' is better suited for table purpose and is now grown only in Kerala. The trade has been able to generate demand for this variety in preference to 'Kew' for table consumption. The farmers switched over from 'Kew' variety for reasons of lack of demand due to collapse of pineapple processing industry in Kerala in mid 1980s. Given this historical background and the fact that 'Mauritius' continues to be demanded in the market and that too at premium, it will be a difficult task for the KAPC to persuade farmers to switch over to 'Kew'. Secondly, the availability of suckers of 'Kew' will also pose serious constraints in expanding its area. The suckers will have to be organised from Karnataka where this variety is grown. It will turn out to be a costly proposition and KAPC will have to intervene and incur part of the cost to motivate farmers to switch to 'Kew'.

    - The other problem which KAPC will face will be of its poor image amongst a section of pineapple farmers residing in villages located in the vicinity of the factory. This was reflected in the action research project organised by IRMA students to mobilise farmers to register with the factory for supply of pineapple. Against this constraint, the factory management may also come under pressure to buy 'Mauritius' variety pineapple from the farmers in the event of fall in price in the open market.

5.7 NAPC - Current Status

As indicated earlier NAPC was formerly registered in December 1999 encompassing five panchayats in its Command Area Development Programme and with a nominated Board of Directors. After its registration, the developments in NAPC can be categorised into CAD activity, ownership and diversification.

- The **implementation of CAD** was brought to momentum with opening of farmers' registration for acquiring shareholding and pineapple supply rights (including shifting to 'Kew' cultivation in

a phased manner). The events that followed in this regard are presented below:

- About 252 farmers have been registered in phases over two and a half years against the target of 1100 farmers with restriction of 0.5 acre/farmer. This level of registration have been achieved through expansion of CAD area of NAPC from 5 panchayats to 9 and finally to 18. Many other terms and conditions of registrations have also been relaxed including interim arrangements for supply of 'Mauritius' and planting of 'Kew'.
- The process of deregistration of farmers for non-compliance with the terms and conditions of the supply of raw material could not be fully implemented for a number of reasons – firstly, the board had to relax the conditions for deregistration due to poor response of farmers, and also because of legal compulsions (court directive). As per the status in October 2002, nearly 72 farmers have been de-registered for not supplying interim quantity of 'Mauritius' while 46 farmers have been deregistered for not planting 'Kew'.
- The farmer loyalty to NAPC continues to remain low considering the observation of NAPC officials that farmers bring pineapple to NAPC only when prices fall in nearby Vazhakkulam market. Secondly, few farmers who have started cultivating 'Kew' have also diverted to pineapple from their captive cultivation to factory to outside market due to better price.
- Lately, the Board of Directors, NAPC have decided to introduce reward (loyalty bonus of Rs.0.50/kg for supplying pineapple as per the terms and conditions of the registration) and penalty (Rs.0.25/kg for short fall in quantity) system. In addition, the procurement price has also been increased from Rs.3.50 to Rs.4.00/kg. How it will impact the NAPC is yet to be judged, but it is felt that it will benefit farmers in terms of stabilising pineapple prices in the open market.
- The non-compliance by the farmer with regard to planning of 'Kew', which was an important component of the whole CAD concept has created a heavy backlog of 'Kew' planting. This has also been adversely affected by increase in price for 'Kew' suckers between Rs.1.60 to Rs. 3.00/kg due to increase in demand.
- Considering the slow progress in implementing the CAD approach in case of pineapple due to typical market

environment, the Board of Directors are proposing to diversify the product portfolio of the NAPC to include – passion fruit cultivation subject to its feasibility and performance in production trials and backward integration with ginger farmers and undertake ginger processing in a big way.

- The NAPC performance can be termed relatively better in terms of organizational evolution given its current **shareholding and ownership status**. The Board of NAPC was constituted as per the norms with four elected farmer members, three experts, three government nominees and the Managing Director and its first AGM was held on July 16, 2001.

- In terms of **forward integration**, the NAPC has tied up with National Dairy Development Board (NDDB) for domestic and export marketing of fruit concentrate. It has also built clients like Dabur in the private sector for purchase of juice concentrate. It has also launched a ready-to-serve (RTS) pineapple juice in 250ml tetrapack called 'JIVE' in the domestic market. It has also launched candied fruit in small tubs and pouches for local market for which the market response has been good. The NAPC is developing a new ginger based product in coordination with Spices Board and working jointly with an Australian Company (market leader in ginger products) to develop the Indian market.

5.8 Issues and Inferences

The Kerala Horticulture Development Programme (KHDP) projects itself as one of the most successful agriculture development programme in the country. The programme has helped nearly 41,000 vegetable and fruit farmers in Kerala through 1886 SHGs spread over seven districts. The KHDP experimented on two major models which evolved over eight years of its existence.

The first model envisaged promotion and development of Self Help Groups (SHGs) at the grass root with successful interventions by an apex level sustainable organization in the form of a council. The council which came into existence in January 2001 was named as Vegetable & Fruit Promotion Council Keralam (VFPCK) to replace Kerala Horticulture Development Programme (KHDP) after 8 years of operation. The council is an organization without profit motive, incorporated under Section 25 of the Companies Act 1956 with its vision as "Empowered farmer groups leading the Nation in reaping the

fruits of Self Help". This organizational model, referred as **'farmer-market model'** in this report, consisting of council at the apex level, field centers (FCs) at the middle level and SHGs at the grass root level primarily evolved to produce and market vegetables and fruits. The other model referred as **'farmer factory model'** was operationalised to ensure that farmers eventually own a processing factory by becoming shareholders and earn supplementary income through value addition (Vaswani and Reddy, 2000).

In the farmer market model, number of innovative interventions were attempted to solve many of the problems. Some of the notable interventions included formation of SHGs to organise production of vegetables and fruits, 'master farmers' concept to coordinate important activities of SHGs, need based training of master farmers and SHG members, participatory technology development (PTD) in place of pre-designed institutional research findings, innovative credit package through five commercial banks to reduce loan defaults and achieve an impressive 90 percent credit recovery, office-less extension system supported by an efficient organizational structure and finally farmers' market (field centers) which were registered as Swarsya Karshaka Samitis (SKSs) under the Charitable Societies Act. These farmer markets were able to reverse the marketing trend, i.e., get traders to come and buy from the farmers' market located close to the farms.

The **'farmer-factory model'** though not equally successful as 'farmer-market model' but demonstrated that farmers can get together to run a state-of-art fruit process factory. The factory named Ndukkara Agro Processing Co. (NAPC) was registered as public limited company where eventually farmers became 70 percent shareholders and Government of Kerala a 30 per cent shareholder. The main reasons for under performance of this model can be traced to wrong planning and lack of understanding of the task environment at the time of project planning. Due to these reasons the project will take longer time to stabilise and produce expected results.

The KHDP have attempted to build new agriculture development and extension models, which are farmers, focused, farmers driven and are relatively more accountable to the farmers. The policy makers, planners and development personnel have lot to learn from KHDP's experiences in terms of its successes and failures. In the scenario wherein there is a need to develop location/regional specific models of agriculture development, the learning from KHDP cannot be undermined.

CHAPTER 6

GENERIC FRAMEWORK: AGRICULTURE-MARKET LINKAGES

6.0 Background

The development of Indian agriculture all these years has remained supply driven. The producer has remained de-linked from the markets, emerging demand pattern and more so from changing consumer preferences. One is compelled to come to an inference that the agriculture production system and the policy framework of the state which supports and influences this system has not been able to keep pace with the requirements of the emerging demand patterns and consumption preferences. The evidence of these imperfections is clearly reflected in the huge surplus of food grains, which has been generated in the last few years. Further, the storage and marketing of this surplus continues to drain the scarce resources of the state. However, these mismatches of the past are understandable considering that food security was the foremost concern of our agricultural policy framework in the post-independence era. Having overcome the food security concerns to a great extent, it is time to re-think on the issue of allowing agriculture to not only stabilise rural incomes, but also generate relatively larger resources for further investment in the rural economy. These investments need to be channelised for improving agricultural productivity, sustainable use or even towards augmentation of resources, which provide necessary support to the agriculture production system.

The agricultural developments in the recent past suggest to a great extent that the country has at least achieved 'food sufficiency' which was one of the major concerns in the past. However, we have not fully addressed our larger and core concern of '**food security**', which also includes 'nutritional security' by overcoming malnutrition, and minimise 'regional imbalances' in agricultural growth and production. In order to achieve, all the objectives of food security, we need to ensure that the poorest of the poor have not only economic access to food, but also receive enough nutrition to overcome malnutrition. Such interventions are extremely important considering the fact that India has the largest number of poor and malnutrition people in the world. Simultaneously, to ensure long-term growth of agriculture allied sector,

the country requires a progressive policy framework to address the emerging concerns of 21st century and greater market orientation at operational level to minimise existing market distortions and maximise competitiveness.

6.1 Redefining Concerns of Indian Agriculture

A careful examination of the existing food supply-demand scenario reminds us that a country like India can not drop food security as a concern until problems of food security at household level, 'nutritional insecurity' and 'regional imbalances' are resolved to a satisfactory level (Fig. 6.1).

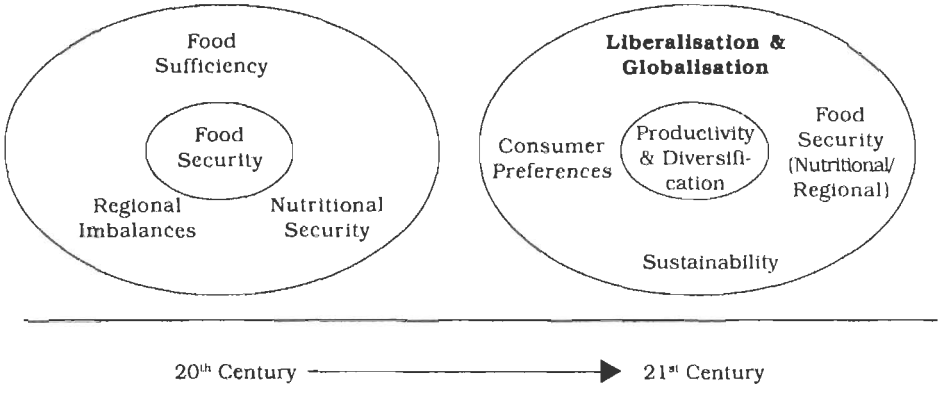

Fig.6.1. Concerns of Indian Agriculture – Past, Present & Future

At the same time, Indian agriculture cannot ignore the emerging concerns of 21st century due to rapid changes taking place in political, economic, technological and environmental fronts around the globe. In a nutshell, the time has come to re-define food security (nutritional security/regional imbalances) and simultaneously shift our core **concern** from **'Food Security'** to **'Productivity and Diversification'** (Fig. 6.1). This core concern will have to be addressed with other existing and new concerns, which include food security as re-defined above, liberalisation and globalisation, sustainability, and finally changing consumer preferences. In other words, Indian Agriculture will have to respond simultaneously to many more concerns, as we enter 21st century to create new opportunities for producers, processors and consumers.

The need for a re-think on these concerns emanates from the very fact that keeping 'food security' in its traditional meaning as core issue of

agriculture development will not bring agriculture to the centre stage of Indian economy. This needs to be replaced with growth through 'productivity and diversification' as Indian Agriculture enters 21st century. At the same time, the task environment during the 21st century will be defined by newer concerns, viz., liberalisation and globalisation, sustainability, consumer preferences and food security with a new meaning (Fig 6.1). As far as the liberalisation and globalisation of Indian agriculture is concerned, the scholars offer too widely differing viewpoints – one of which believes that opening up of agriculture will lead to increase in poverty levels and proportion of landless cultivators. The other viewpoint suggests opening up of agriculture sector through removal of undesirable controls would increase public investments, investment in rural infrastructure and rationalisation of subsidies. It is hoped that such interventions by the state will encourage efficiency, private investment in agriculture and expansion of agro-processing activities. Independent of these viewpoints, Indian agriculture has to evolve its solutions relevant in its own context and increase investments in agriculture, which have fallen to low level as against 24 per cent of GDP a decade ago.

6.2 Market Orientation of Indian Agriculture

The Indian agriculture like other countries in Asia is characterised by small holdings, seasonality and traditional production and management practices. These characteristics constrain Indian agriculture to remain a dominantly supply driven system. In the emerging scenario more pressure is likely to build up on this system through 'liberalisation and globalisation' on one hand and changing 'consumer preferences' on the other. In addition to a progressive agricultural policy package, these pressures will have to be countered partly through driving agriculture towards greater market orientation. The ideal situation would be to gradually move the current supply driven production system to a demand driven system. In other words, imparting market-orientation to Indian agriculture through dissemination of market information, linkage with agro-processing sector and promoting competition and transparency of agricultural produce markets have to take place. The demand driven system includes both the quantity and quality of the agricultural produce.

While supporting this novel argument, questions will also be raised regarding the practicality of its implementation, particularly in the context of a highly uncertain production system like agriculture. A clear

understanding of the consumption system will be required to catalyse market-oriented agriculture production. Further, with what degree of precision the supply can be matched with the demand and even more difficult question is whether there are time-tested interventions which can influence demand and supply in the short run. The past experience suggests that the phenomenon of uncertainty in demand and supply is inherent to agriculture production and consumption. However, enhancing market-oriented production of agriculture produce should not be attempted at the cost of employment generation and food security particularly in the Indian context.

The mismatch between supply and demand in case of agricultural commodities happens primarily because of the inability of the farmers to forecast the exact demand, changing nature of the demand itself and lack of efficiency of commodity markets. Unfortunately, farmers lack the mechanisms to control and influence the demand. Still, the assessment of demand through better understanding of agricultural markets must precede any effort to reconfigure the agriculture production systems. However, the process of aligning the demand and supply is quite complex due to the influence of numerous external factors on production system and/or operation of agricultural markets. Berlo (1993) observed that the vegetable processing industry is a representative example of uncertain conditions and the need for planning. The three components important for this industry are - market, industry and agriculture which he considered as parts of a logistical chain. But each of these components has a different cyclical pattern and therefore, effective and efficient planning can only partially deal with this uncertainty. Under the circumstances, the best that possibly can be attempted is a tactical balance between demand and supply. Moreover, this balancing approach has to be uniquely tailored in tune with the typical characteristics and requirements of Indian agriculture.

Secondly, it is necessary to link agriculture production system and product characteristics with the preferences of the consumers, processors and manufacturers to achieve market orientation. Therefore, in addition to achieving tactical balance between demand and supply, mismatches also have to be overcome in terms of quality, product attributes and product specifications. Towards this end the agribusiness firms should maximise synergy between three important sub-system of agriculture production system namely R&D, extension and markets.

The challenge, therefore, lies in aligning the projected supply with the projected demand, or in other words, adjusting the agricultural production system to market conditions of demand and supply to the extent possible within a given market boundary. In the process of promoting market oriented agriculture, several initiatives will have to be undertaken to restructure processes, enterprises and institutions including capacity building of personnel engaged in its promotion.

6.3 Case Studies - Learnings

The focus of this long-term study was to understand agricultural-industry linkage in all its dimension and how such linkages can be strengthened further and even promoted to new commodities and new geographical regions. It was assumed that the learning from these case studies will provide adequate insights to achieve the objectives of this study. Probably, the case studies conducted do not represent full spectrum of agriculture industry linkage models, which have evolved in the recent past. This deficiency has been compensated for including a separate section in this chapter under the title "On-going Initiatives in Vertical Coordination in India". The case studies, which covered varying forms of vertical coordination ranging from 'spot markets' to 'cooperation' provided valuable input for the 'generic framework' of agriculture market linkage. The salient learning points from the individual case studies, are presented below:

6.3.1 Marketing of Horticulture Products - Cooperatives in South Gujarat

The study observed that the bondage between the cooperatives and its membership revolved around three major factors, viz., strong backward integration through provision of services needed by the membership, purchase of produce from its members and processes of market transaction. The findings also suggest that some of the services offered by the cooperatives received low rank in importance and usage from the membership. It is, therefore, necessary for the cooperatives to not only identify services in accordance with the needs of the members, but also offer these services in a manner, which maximises their usage and results in better allocation of available resources within the cooperatives.

In purchase of produce by the cooperative from its members, the cooperatives have made extra ordinary effort to maximise the transparency of the system resulting in a very high satisfaction amongst the members with regard to processes of transaction, which include

grading, weighing, pricing, etc. The study observes that baring a few exceptions, these cooperatives have been able to build strong relationship and trust with their membership through an effective participatory governance system. Surprisingly, even the magnitude of B class membership, small or large has not influenced the membership trust in these cooperative.

In order to organise efficient marketing of farm produce procured from the membership, the cooperatives need a strong interface with markets particularly under growing competition from the private trade. The cooperatives have not been able to achieve the desired level of perfection in forward integration with markets. One of the probable reasons for otherwise efficiently functioning cooperatives could be the lack of appreciation for the fact that catering to distant and competitive markets requires radically different expertise as compared to establishing backward linkages. Secondly, the growing competition would require the cooperative to improve their economies of scale and product differentiation (a popular variety or fruits with certain quality differentiation) to effectively compete in the marketplace. In order to achieve these objectives the cooperatives have to not only act as efficient and honest middlemen, but work proactively to enhance value addition of their products or commodities. Therefore, the cooperatives need to strengthen the organising element by influencing the production system to align them more closely with markets and maximise the membership benefits.

The study, though not very explicitly, suggests that the farmer's behaviour towards the cooperative is influenced by the trade-off between the price realised for his produce and the nature and extent of services offered. Therefore, in order to sustain emerging competition and contain possible discontent in the membership and to achieve business growth, the cooperatives will have to find new ways and means to radically improve upon their marketing capabilities and satisfy expectations of their membership through constant improvement in range and quality of services.

6.3.2 Contract Farming in Chicory

The cultivation of chicory on contract basis was probably the first such experiment in India started in 1956 in Jamnagar. With a small beginning the chicory contract farming now covers 1700 farmers and 4500 acres (Datta, 1996). However, the geographic location of cultivation shifted from Jamnagar to Kheda district in Gujarat in the early 80s.

The study observed that most of the farmers (70%) currently growing chicory under contract farming with various agencies including HLL seem to be quite satisfied, but 62 per cent of the non-contract farmers had unsatisfying experience during the period of contract. The sources of satisfaction amongst these farmers included terms of payment, free supply of seeds, hassle free transaction and payment of committed price by the firms even in the event of decline in price in the open market On the other hand, the reasons which forced farmers to discontinue the contract farming included - lower prices offered by the firms (38.1%), declining profitability, poor economic viability of chicory based cropping systems (28.6%), transactional problems (23.8%) and absence of cooperatives (14.3%) in chicory.

The study observes that most of the firms including HLL honoured the terms of conditions of the contract and occasionally extended goodwill gestures to minimise the financial losses to the farmers. However, the benchmarking of price reflects the opportunistic behaviour of these agencies. In fact, the price paid for chicory should be benchmarked with the price of chicory-blended coffee. In reality, the prices of chicory paid by these agencies to the farmers are in parity with this benchmark or market price of chicory-blended coffee. On the other hand, the chicory prices paid to the farmers' loose parity when coffee prices shoot up and so the prices of chicory-blended coffee. Therefore, the chicory procuring firms show opportunistic behaviour in sharing of market rewards with the farmers. The firms do not want to loose the opportunity of making high profits when market conditions permit, but at the same time do not want to share these rewards with the contract farmers. Unfortunately, in absence of alternative use chicory, farmers do not have any appreciable role in negotiating the price of their produce.

The study also observes that procurement firms have not made any attempt to build long term relationship with the contract farmers beyond execution of chicory contract, i.e. in terms of improvement in the quality of agriculture or any welfare measure for the area. This is evident from the fact that lately many firms have resorted to intermediation to procure and process chicory for a given quality at a certain price. In the process, they have been able to transfer the price uncertainty to the intermediary (trader/processor) who in turn passes it on to the farmer. This structural change in contracting has been facilitated due to failure of cooperative intervention and institutions in the past and in turn re-establishment of the monopoly of private trade (Vaswani et. al. 1992).

The firms have shown a lack of long term commitment to protect local environment, build agriculture on sustainable basis and use contract farming purely for the purpose of sourcing raw material supplies. Nearly 43.3% of the contract farmers were earning lower profits than the non-contract farmers due to the adverse impact of Chicory cultivation year after year and lack of scientific crop rotation. The contract farmer is compelled to do so with the fear of loosing the contract. Instead of addressing this problem of monoculture and declining productivity, HLL has started to identify alternative locations in other districts in UP mainly in Etah wherein it manages and integrated rural development programme with focus on dairying.

6.3.3 Procurement Of Cotton

The case study on procurement of cotton very clearly brings out the plight of the farmers as suppliers to the textile industry having fragmented structure. Surprisingly the textile industry in general has hardly made any effort towards backward integration with the cotton production system. The industry seems to keep its procurement options open including import of cotton with the plea that it is cheaper and has a uniform quality. The stand of the industry is surprising amidst report that India is rapidly forfeiting the cost advantage its manufacturers have in home grown cotton because of high levels of contamination, poor quality of cottonseeds and low productivity (Business India, 2001). These findings are based on a study on cotton textile exports beyond 2004 by McKinsey and Co. for the Cotton Textiles Export Promotion Council (Texprocil). In fact the declining trend in indigenous production is reflected in the level of cotton production during 02-03 to a decade low of 136 lakh bales from a high of 178 lakh bales in 1996-97.

This study also observed that the farm to textile mill transaction is intermediated by ginning and processing (G&P) units. Relatively larger investments have been made at this level to improve technology and overcome the most serious quality problem of cotton, i.e., contamination with reasonably good success. Automation has increased the production rate in most ginneries. In fact such intermediation has only helped the industry and not the farmer. As far as the farmer is concerned, the industry has not addressed the problem of productivity, which may improve his investment capacity to not only improve yields but also improve the quality of cotton. However, the Cotton Cooperatives have tried to create some meaningful linkages with the membership

through input distribution and output processing and purchase activities. Similarly, Cotton Corporation of India (CCI) has attempted to implement cotton development programmes of GOI in addition to sponsoring local R&D in cotton.

The emerging pattern of the linkages is a clear pointer towards opportunistic behaviour of the textile industry and its inability to plough back part of its profits into the cotton production system. The industry argues that globally the textile industry is highly competitive and they can only compete in such markets when raw material is available to them at international price. Such opportunistic behaviour was also observed at other levels in the marketing chain, i.e., at the level of ginning and pressing units, farmers and traders. The empirical evidence suggests that firms pursuing cost leadership strategies place considerable emphasis on achieving scale or absolute cost advantages. These firms often act on spot-markets. In cases where the flow of raw materials is insecure or a guaranteed steady flow is a condition for pursuing a cost-leadership strategy, "long term" contract (coordination contract type) are entered into with farm-firms (Drescher 2000). With the exception of one firm (APPACHI Cotton Co.) in Pollachi in Tamil Nadu, the textile industry has not taken much interest in building long term relationships with the farmers.

On the other hand, some of the experts involved in cotton production allege that the mills preferred to import cotton lint with the plea that it was cheaper, with a uniform quality. The real fact is that they could fetch the fibre on credit, which is negotiable unlike in the domestic market. These fibre-exporting countries have tremendous built-in export subsidies that are hidden in the costing of the product to afford such offer of credit to buyers. Since they find that labour is cheap in Asian countries, they transfer raw material at subsidised cost to get back yarn or even finished products at negotiated price. This has ultimately brought in an era of reducing domestic initiatives to survive within highly pressurised trade system. The Indian textile industry is also not interested to plough back a share of profit into the cotton production system on which they are largely dependent to sustain their units (Mayee, et.al 2002).

Some new initiatives have been taken both in the private sector and by the state to re-look at the linkages in the cotton industry. The launch of multi-objective Technology Mission on Cotton (TMC) proposes to expand integrated cotton cultivation (contract farming) to achieve

appropriate linkages within the textile sector. This means creating effective and efficient linkages between the end users of cotton and growers with ginner/trader acting as crucial intermediary. The system would be on the same lines as that adopted in the sugar sector. The private sector initiatives such as 'Farm to Fashion: A win-win formula' which offers scope for a 'back-to-back' agreement between cotton farmers and mills seeking specified cotton varieties, with ginning firms acting as the coordinating agencies.

These initiatives reflect that at last the textile industry and government have awakened to address the problem of cleanliness of Indian cotton, but the larger issue of productivity and in turn cost competitiveness of the Indian textile industry based on domestic raw material has not been fully addressed in the current initiatives. The government has to make a rigorous and affective step to settle issues relating to Bt cotton to enable productivity improvements and check Bt cotton market susceptibility to spurious materials. As rightly stated, all stakeholders in the cotton sector have to pull together to achieve global competitiveness i.e. "globally acceptable quality at globally comparable cost". The industry and the cotton production system have to respond to such global challenges that will emerge with the phasing out of the multi-fibre agreement (MFA) by 2004.

6.3.4 Kerala Horticulture Development Programme (KHDP)

The Kerala Horticulture Development Programme (KHDP) can be considered as one of the most successful agriculture development projects in the country. The programme has helped nearly 41,000 vegetable and fruit farmers in Kerala through formation of nearly 1,886 SHGs spread over seven districts. The programme interventions have resulted in improving the average productivity of vegetable from 8.0 to 12.8 MT/ha and that of fruits from 12.0 to 17.3 MT/ha. In addition to achieving results, which are impressive in terms of statistics, the programme has also been successful in introducing new and effective interventions. Some of these important concepts/interventions include formation of Self Help Groups (SHGs) to organise production of vegetables and fruits, 'master farmers' concept to coordinate important activities of SHGs, need based training of master farmers and SHG members, participatory technology development (PTD) in place of pre-designed institutional research findings, innovative credit package to reduce loan defaults and achieve an impressive 90 percent credit recovery, office-less extension system, and finally establishment of field centers (farmers' market) for sale of horticulture produce.

As planned, Vegetable and Fruit Promotion Council, Keralam (VFPCK) was formed to succeed Kerala Horticulture Development Programme (KHDP) after 8 years of operation. The Council took over the field level activities of KHDP with effect from April 1, 2001 and the entire activities from January 1, 2002. The Council is an organization without profit motive, incorporated under Section 25 of the Companies Act 1956.

The success of KHDP was primarily observed in its ability to develop on its own interventions to suit the needs of the participating farmers, which were in tune with the local environment. Further, it promoted new institutional forms like **farmer's market** and **farmers owned agro-processing factory.** In a nutshell, all the interventions of the programme were primarily farmers' focused, farmers' driven and are relatively more accountable to the farmers. Secondly, the success of horticulture component (vegetable production) was also possible due to availability of ready market for locally grown produce as Kerala imports 80% of its fresh vegetable requirement from neighbouring states viz. Tamil Nadu and Kerala.

Although the concept of farmer's market appears to be relatively successful at the moment, but the farmers owned agro-processing factory had its own set of problem and cannot be termed as a success. In fact the factory has acquired the status of a residual customer considering that the farmer loyalty to the factory continues to remain low. In addition, the farmers bring pineapple to the factory only when prices fall in the nearby markets. Secondly, a few farmers who have started cultivating a suitable variety known as 'Kew' have also diverted pineapple (Kew) from their captive cultivation for the factory to outside market due to better prices.

A careful analysis of the reasons for failure of these farmers owned factory project reveals serious lapses, which occurred at the project planning stage. After having established the factory, the Nadukkara Agro Processing Company (NAPC) management is finding it nearly impossible to neutralise two major disadvantages, which were ignored at the planning stage, viz., price disadvantage, and the disadvantage of non-availability of pineapple variety (Kew) suitable for processing and exports. The price advantage was absent due to availability of relatively higher price for alternative use (for raw/table consumption) and closely connected to this was the variety disadvantage because the variety that is suitable for table use (Mauritius) is not suitable for processing. The efforts of the management to persuade some farmers to switch over to

processing variety (Kew) through a systematic command area development approach is yielding results but taking unduly long time. Given a mixed picture of success and failure, one may question the sustainability of these institutional mechanisms, but for the time being KHDP has set an example of building farmers owned institutions outside the cooperative sector.

6.4 Past and Ongoing Initiatives in Vertical Coordination in India

The vertical linkages in the agricultural commodity market have been evolving over a period of time, probably at the faster pace in developed countries as compare to developing countries. In India the past and ongoing initiatives in vertical coordination have resulted in simultaneous action in three areas – evolution of commodity and location specific linkages between producers and agro industry, evolution of supply chain models integrating technological advancements and promotion and regulation of these mechanisms with particular reference to contract farming. The commodities which have been covered or likely to be covered under such arrangements include gherkin, potato, spices, groundnut, passion fruit, citrus, silk, etc., mainly destined for export. The portfolio of commodities, which will qualify for contracting and integration, will expand even to main crops whenever government withdraws its minimum price support programme. Some of the important initiatives of the past and currently in progress have been described below:

6.4.1 Evolution of Commodity and Location Specific Linkages

The process of evolution of any major and noticeable linkage between the producers and agro-industry in India began with the formation of Anand Pattern Cooperatives (APC) in early 50's. The process picked up again after a long gap of nearly four decades through public interventions and private sector initiatives in early 90's, soon after liberalization of Indian economy.

6.4.1.1 Anand Pattern Cooperatives (APC)

The APC model is perhaps best known for the striking successes it has achieved in the development of India's dairy industry. The APC was the first organizational approach of its kind in agriculture commodity sector that attempted development of dairy sector in an integrated manner. The APC went on to prove the extent to which modern dairy technology and institutions can be utilized to minimize the exploitation

of small milk producers in free but imperfect markets; enhance their share in consumer rupee and at the same time ensure the all round development of a viable and efficient dairy economy (Rao 1990). The totality of the treatment given to the commodity is evident vertically in as much as it encloses the entire gamut of operating intermediate between primary producer and final consumer, and horizontally umbrella the provision of needed inputs, extension and services. The structure of APC model is such that even though base production is on a very small scale, the economies of scale for various operations are made directly accessible to individual producers, while vertical integration on the basis of cooperative ownership ensures that the value-added to primary milk is passed on to the primary producers, remaining within the agricultural sector, so to say, instead of leaking out. The APC seems to lie in "formal cooperation" category on the vertical coordination continue suggested by Peterson and Wysocki (1997).

As per the assessment of National Dairy Development Board (NDDB), the Anand Pattern succeeds because it involves people in their own development through cooperatives where professionals are accountable to leaders elected by producers. The institutional infrastructure – village cooperative, dairy and cattle feed plants, state and national marketing – is owned and controlled by farmers. The model was replicated in many other states though with lesser success. Through the 26 years (1970-96) of Operation Flood, NDDB has facilitated establishment of 170 Milk Producers' Cooperative Unions in various parts of the country, which federate into 15 State Cooperative Milk Marketing Federations. Over the years, these federations have created strong and popular brands like Amul (Gujarat), Vijaya (AP), Verka (Punjab), Saras (Rajasthan), Nandini (Karnataka), and Milma (Kerala).

6.4.1.2 Small Farmers' Agri-business Consortium (SFAC)

The other public intervention in promoting vertical coordination was made during the budget proposal of 1992 in the name of Small Farmers' Agri-business Consortium (SFAC), which became operational only by 1994-95. The SFAC was registered as public-private joint venture society and has also been declared as a financial institution under Reserve Bank of India Act, 1934. The basic objective of SFAC was to catalyse agro-industrial growth and pave the way for establishment of integrated producers organisations with forward and backward linkages. Currently, the SFAC is engaged in diverse activities but has not been able to make much impact in creating proposed

linkages. It has taken two five-year plans to create SFACs in 15 states. The only notable achievement of SFAC has been in the promotion of horticulture in North-Eastern states by establishing linkages between farmers and food-processing corporates. SFAC has managed to rope in Godrej Foods and NAFED for manufacturing and marketing of exotic juices – passion fruit seabuckthorn, a wonder berry (energy enhancing drink). However, the agency seems to have performed poorly in terms of its promotional and infrastructure development role.

6.4.1.3 Private Sector Initiatives

The private sector initiatives started in an organised way with the entry of Pepsi Foods Pvt. Ltd. into contract farming of tomato in Punjab in 1989. The **Pepsi model** is essentially based on the principle that location-specific R&D will drive profit enhancement over the whole range of crops. R&D to processing and distribution, are fully integrated in the model (FICCI 2002). Beginning with this initiative, liberalisation and globalisation added further momentum to this process of agriculture – industry linkage. When this process was gradually gaining momentum, its problems also came to the forefront. The PHD Chamber of Commerce and Industry (PHDCCI) has said that the food processing industry is suffering in the absence of effective backward linkages with small farmers which causes mismatches between production schedule of the processing industry and supply of raw material for farmers. The study noted that there have been instances where companies have gone into contracts with farmers for supply of raw material after providing them with various inputs like seeds, fertlisers and other technical and financial assistance. The study went on to conclude that the concept of 'contract farming' has been successful in isolated cases for products such as sugarcane and soybean which do not have much of demand outside the processing industry (PHDCCI 1997). Similar views were echoed earlier by Datta (1996) while narrating the experiences of Brooke Bond Lipton India Limited in contract farming. He stated that in times of glut, some factories cannot accept the entire produce, and farmers are put to grate hardship. Similarly, companies have little recourse when contract farmers sell their produce in the fresh market at relatively higher prices. The PHDCCI described that these experiences acts as disincentives for the food processing industry to export or to even produce for domestic consumption.

These teething problems including that of market regulation are now being addressed by the central and state governments resulting in more corporate houses becoming involved in the contract farming of agricultural

products to ensure better quality of raw materials and minimize costs. Some other contract farming ventures which have come up recently include McCain Foods in potato, Pepsi Foods in chilly, peanuts and citrus, Hindustan Liver and UB Group for Basmati exports etc.

6.4.2 Supply Chain Management (SCM) Initiatives

The SCM concept has received increasing attention as an approach for improving vertical coordination and market performance. The SCM is also very relevant, with substantial opportunities for improved efficiency and performance, if the perspective is from an agricultural commodity industry (Rick et. al. 1999). However, the task environment in the agricultural commodity sector in India is nearly hostile considering its fragmented structure, inadequacy of infrastructure, large number of middlemen, and host of rules and regulations. In spite of these difficulties, number of innovative and resourceful organizations has come forward to intervene in the management of our agricultural supply chain. Some of these success stories have been documented by FICCI, which observes that partnerships become the prime criteria in supply chain management (FICCI 2002).

6.4.2.1 Tata Rallis

The Tata Rallis in the process of marketing the key farm inputs, including agri-chemicals, pesticides, seeds, fertiliser's, etc. have succeeded in leveraging their strength to the benefit of farmers and other partners. These partners include processors interested in raw material procurement for processing and financial service institutional partner to offer credit on inputs to the farmers as well as funding working capital requirements. Additionally, Tata Rallis are utilising their core strength, i.e. distribution of inputs, to undertake location specific R&D and provision of extension service for the benefit of the farmers (Fig. 6.2).

Currently there are several projects in operation – wheat and Basmati rice at Panipat, Piperia, Athrauli, Hardoi and Shahjanpur and for fruits and vegetables at Nashik and Chitradurga. In all these projects, credit is provided by ICICI while the produce is picked up at prevalent rates and payment made to farmers up front by Rallis partners such as Hindustan Lever Ltd. (HLL), Cargill and Food World. The FICCI documents states that it is early yet but the response from the farming communities and partners has been encouraging and Rallis has plans to rapidly upscale its operations in the coming years. New business opportunities are being created.

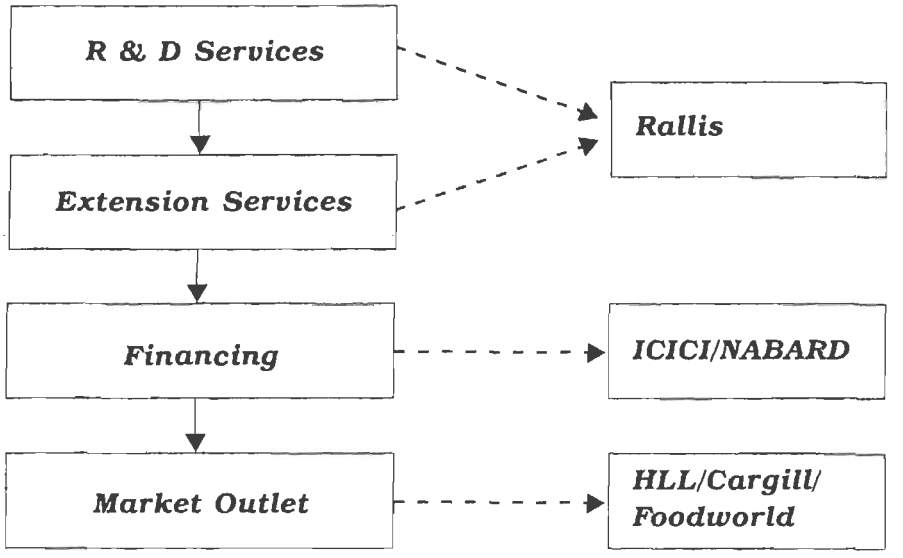

Fig. 6.2 : Tata Rallis Supply Chain Management Model

Note : Operating in States where direct procurement from farmers is permissible under APMC Act

Source: FICCI, 2002, Policy Paper "Indian Agriculture Unbound: Making Indian Agriculture Globally Competitive"

6.4.2.2 Cargill India

Cargill India procures from farmers directly without middlemen. This provides the farmers not only an assured marketing outlet but also allows them to eliminate fees, commission, brokerage etc., paid to a host of middlemen in the supply chain as it existed in the past. The system enables the farmer to save almost Rs.800/MT of grain merely by squeezing out inefficiencies from the system. Coupled with this initiative, Cargill India is also prepared to fund procurement, storage, warehousing and ancillary activity related to grain handling and trading operations. The key focus for Cargill India has been on disintermediation and intelligent use of financial resources and services. This private sector initiative is likely to expand further to include farmers from a variety of locations in India and across a broad spectrum of food grains, oil seeds and cash crops.

6.4.2.3 ITC e-Choupal

The e-Choupal model promoted by ITC is specifically designed to overcome the unique characteristics of the Indian agriculture. The model tends

to resolve the problems that are associated with small and fragmented farm holding, weak infrastructure, supply chain intermediaries and most importantly due to the lack of quality and real time information.

As a part of this project, ITC has set up small Internet kiosks at the village level to provide farmers real time market and pricing related information and highlighting arbitrage opportunity in sales between various Mandis. It is also involved in providing information related to prices, availability of inputs, weather data and other information related to the agricultural sector. These kiosks are manned by local level lead farmers called "Sanchalaks" who transmit back to the company, information that enables ITC to respond effectively to procurement challenges. ITC is also involved in providing online extension services. ITC has also tied up with Monsanto and Madhya Pradesh's Seeds Corporation for seeds and BASF for fertilizers.

ITC believes, that their intervention in the supply chain has permitted farmers to increase their realizations on crop sales, from anywhere between 10% - 15% in relation to what was realized earlier. Further, the company has succeeded in generating savings of 3% - 4% of procurement cost allowing ITC to incrementally improve its competitive position in national and international commodity trade. The model is an excellent example of information technology working towards the benefit of both farmers and marketer.

6.4.2.4 Mahindra Shubh Labh Services

The Mahindra Shubh Labh Services is wholly owned subsidiary of tractor major Mahindra and Mahindra. The model provides for services that help the farmer to perform the task of farming itself better and to improve farm profitability. The major services include supply of all agri inputs, provision of farm machinery on rent basis and agriculture extension on commercial basis. Mahindra has adopted a hub-and-stoke model in its operations so that it can improve its reach across a greater number of farmers. The experiment, which began in October 2000, is now working in 13 districts across relatively poorer states like Tamil Nadu, Andhra Pradesh, Karnataka and Rajasthan. The typical farmer who goes in for these services owns 5-10 acres of land. The fees for these services are fixed in such a way that it works out to 10-20 per cent on the incremental profit. The fees have a floating and fix component, the farmer being linked to an assured increase in profitability. In addition to these services Mahindra Shubh Labh is negotiating with buyers and plan to put farmers directly in touch with them, i.e., to act in the capacity of market makers (ET Series - Rural Economy, 2002).

6.4.2.5 MPKGB – HLL Joint Venture

The MP Government through MP Khadi Gramodyog Board and Hindustan Lever Ltd. (HLL) has entered a new era of private-public sector partnership. The joint venture has launched a umbrella brand "Vindhya Valley" for food products under which HLL will market the board's products in the country. It is for the first time that a multinational company has developed a food product brand for the state government and lent its expertise in the field of marketing strategy, product design and development as well as formulation and execution of a multi-pronged communication strategy. The joint venture would address the problem of self-help groups (SHGs), which are unable to market their product properly. On the other hand, HLL will be benefited by joining hands with the government as it can sell its products in the rural market through the network of SHGs.

6.4.3 Promotion and Regulation Mechanisms

With vertical integration activities taking a slow but cautious start in Indian agriculture, particularly contract farming the government has started intervening to promote and regulate these activities. Besides promoting directly, the government can facilitate adoption of vertical integration by promulgating a model contract farming law that would provide for tripartite arrangements between the farmer, the industry and the government.

Although, the major initiative has come from the private sector, the government has also decided to encourage integrated cotton cultivation (contract farming) in four projects, one each in AP, MP, Gujarat and Orissa through state-owned Cotton Corporation of India (CCI). The Government of India is also working with state governments to amend the Agriculture Produce Marketing Act (APMC Act) to provide freedom to the farmer to sell their produce directly to the potential processors. Currently, the farmers are required to trade their commodities exclusively through the stipulated APMCs and their licensed traders. With the amendment to the Act, corporates would find dealing with the farmer much easier than what exists today. The states like Karnataka and Madhya Pradesh have already taken a lead in involving private sectors in agri-marketing and made subsequent amendments.

The State Government of Punjab is proposing to promote Farmer's clubs to organise farmers through a new subsidiary of Punjab Agro Industry Corporation (PAIC). This is likely to make farming in Punjab a planned and systematic affair. The state has gone further to tighten

law with regard to contract farming. It is understood that all first-time corporate players in the contract farming of basmati, in particular, are being asked to provide guarantees to the state government while the companies which have already been successfully contracting with farmers for several years now, have been exempted from this provision. The corporate and bank guarantees are being asked for to ensure that these firms finally pay to the farmers what they promised. On the other hand, the contracting firms as part of the contract with the government have been allowed to blacklist all growers who enter into an informal agreement with them but eventually sell in the open market to get a better price. With these legislative changes the interest of the industry and the farmers will stand protected. This legislation would have to be followed by establishing a redressal mechanism to address cases of breach of contract or situation demanding resolution of conflicts.

6.5 Generic Framework: Agriculture - Market Linkage

The agriculture transformation from 'commoditisation to commercialisation' is driven and contributed primarily by increasing competition, changing consumer preferences, changes in government policy and regulation, R&D and technology transfer. These influences are reflected in changes in the structure of agro-industry in terms of ownership, financial deployment, technology, economies of scale and similar characteristics. Besides these changes in the task environment, the changes are also noticeable in agriculture which might best be described as changes in the fundamental business propositions and the ways of doing business.

At broader level, effective agriculture-market linkages begins with market orientation. In the context of agriculture, market orientation can be considered as a guiding philosophy so as to achieve responsiveness to market information and market demand. The market oriented agriculture should attempt to achieve:

- Tactical balance between demand and supply to achieve certain degree of price stability and
- Servicing the market demand in requirement with the preferences of end-users to realise benefits of value addition.

In the current scenario the production and marketing system remain relatively independent from one another with informal sector providing loose link between the producer and terminal markets.

Therefore, the open/spot market mechanism would require more effective linkages to achieve tactical balance between demand and supply. The other objective of the market orientation requires greater alignment across production, processing and distribution value chain. Such an alignment should have vertically coordinated production system that orients agricultural production to meet the needs of specific customer markets. Under such arrangement, the focus is on the final product and/or specific product attributes rather than the primary commodity. The vertical coordination (varying types/degrees) allows a firm to obtain raw materials with specific quality/ specifications without getting into another business domain, i.e., farming. Further, in such a vertically coordinated system the production steps have to be necessarily interdependent. The farmer becomes a part of a larger food production system and produces according to the market demand. Such interdependencies become more relevant in cases where the end-use markets have very specific raw material/product requirements.

Based on the linkage structure described above, findings of the individual case studies covered as a part of this larger study, analysis of past and current initiatives in vertical coordination in India and empirical research done elsewhere, a generic framework of agriculture-industry linkage was hypothesized for the study. With the incorporation of findings of the case studies as and when available, the focus of the proposed generic framework was enlarged to agriculture-market linkage with agriculture-industry linkage as a subset of this larger system (Fig. 6.3).

All attempts have been made to ensure that the proposed generic framework does consider the ground realities of Indian agriculture, structure of agricultural produce markets and consumption patterns. The agriculture which is characterised by smallholdings and inadequacies in the quality of crop husbandry at the farm level, dominance of trade in agricultural produce marketing and relatively rigid affinity to native foods at the household level. All the above inputs enabled identification of three important **core processes**, which seem to be critical in establishing effective agriculture-market linkages. These processes are:

- Building effective backward linkages,
- Conduct and performance of markets and marketing institutions, and
- Demand generation through value addition.

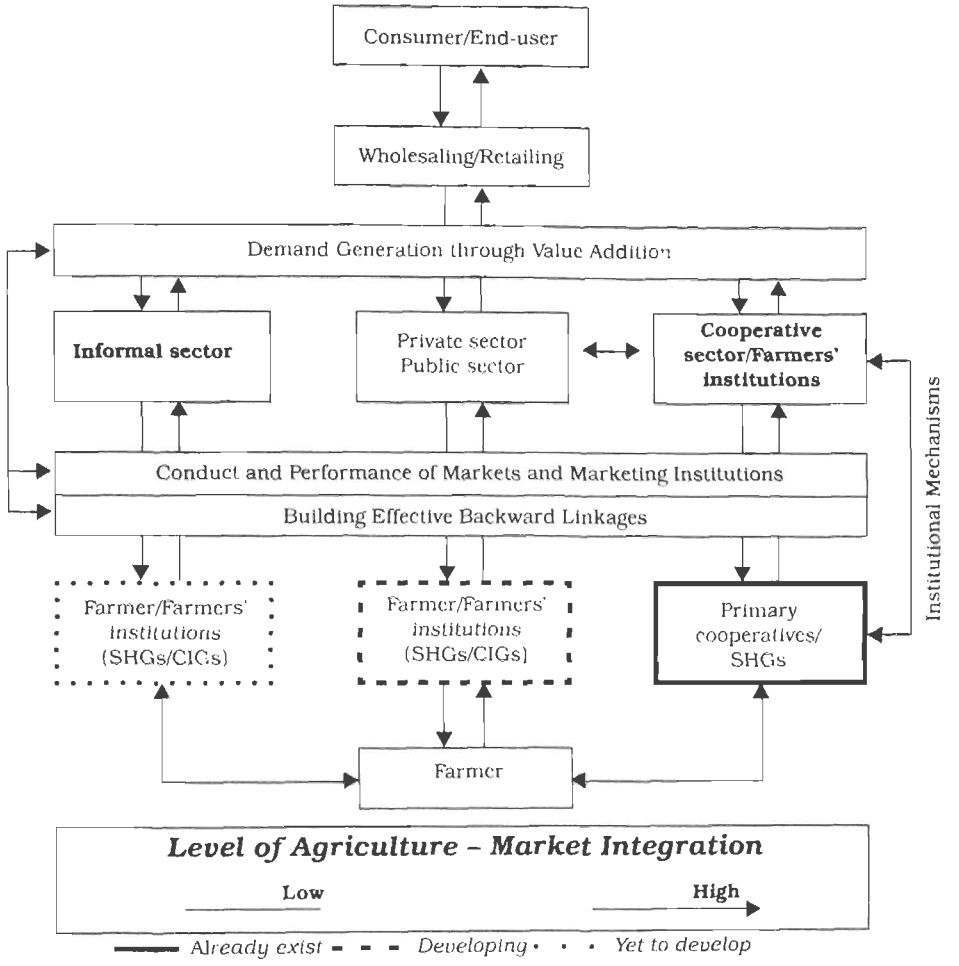

Fig. 6.3: Generic Framework Towards Establishing Effective Agriculture-Market Linkage in Indian Context

Any attempt to improve interdependency of agriculture with industry/market will be determined by the success and failure of these processes with due consideration to the externalities which will influence these processes.

The generic framework depicts three categorise of **marketing institutions**, which are likely to link agriculture with the market system, viz., informal to formal producers organisations including cooperatives, private and public sector institutions and lastly, informal sector consisting of various functionaries involved in commodity trade. These institutional mechanisms differ in the ways in which they link themselves to the production system and interact with the markets. As far as the intra institutional interactions are concerned the private sector largely depends

on informal sector marketing institutions and to a lesser degree on cooperatives. This was evident from case studies on cotton and chicory. On the other hand, the cooperatives also end up in becoming raw material suppliers to the private sector, but rarely act as buyers of raw materials from informal/private sector. The case studies and other empirical evidences suggest that these market institutional mechanisms achieve increasing degree of integration with production systems, as one move from informal sector to cooperative coordination. The agriculture-market integration gradient depicted in the framework, parallels with the continuum wherein coordinating mechanisms move from completely external (spot markets) to internal control (formal cooperation) and finally to vertical integration (Peterson, 1997).

In terms of analysis the processes of 'building effective backward linkages' and 'conduct and performance of marketing institutions' has been adequately covered in this study. However, the process of 'demand generation through value addition' has been partly conceptualised based on the findings of this study and part of it comes through empirical studies done in the past and also by hypothesising a role for agriculture in the total economy. Similarly, 'informal sector' as institutional mechanism has received lesser attention considering the scope of this study in its first phase and availability of vast literature on the subject. The discussion with regard to criticality of each 'process' and 'institutional mechanism' in tightening agriculture market linkage along with implementation issues involved is presented in the following section.

6.5.1 Building Effective Backward Linkages – Evaluating Alternatives

An efficient backward integration of industry with agriculture should lead to globally competitive production system in terms of cost and quality. In this context, a review of the on-going initiatives in agricultural coordination mechanisms suggest that interests in vertical coordination, especially in contract farming is on the rise in the country. Resultantly, an impression is being created that contract farming type of coordination may resolve many problems of Indian agriculture. The learnings from the in-depth analysis of four case studies, which were part of this study, do not fully substantiate these impressions. There are some potential issues that beg for more detailed and thorough analysis to substantiate or negate these impressions. Some of the critical issues to consider to evaluate whether a backward linkage mechanism will work or not are:

- Do we know the impact of vertical coordination on producers?
- How do returns for producers in those crops and livestock compare with less coordinated sector or compare within these commodities before and after coordination?
- Who will control the vertically linked production system and benefit from higher margins?

Our broad understanding that increasing degree of integration with production systems increases, as one move from informal sector to cooperative coordination do not provide satisfactory answers to all the questions raised above. Therefore, the core processes have been evaluated with respect to each marketing institutional mechanism to find answers to the questions raised above, identify critical issues and future areas of research with respect to establishing sustainable backward linkages.

6.5.1.1 Vertical Coordination through Cooperatives/Farmers' Institutions

In fact the advantages of collective bargaining were known as far back as 1928, when the Royal commission on agriculture stated, "group marketing must be more efficient, than marketing by individuals, especially in conditions such as those exist in India, where the individual is a small unit" (Jain, 92). The Reserve Bank of India gave institutional definition of cooperative marketing and defines a cooperative marketing society as "an association of cultivators, formed primarily for the purpose of helping the members to market their produce, more profitably than possible through private trade". At conceptual level, a very convincing argument was made by Alderson (1965) in the context of organized behaviour system which states that **"In an organized behaviour system the organizing element is the expectation of the members that they as members of the system will achieve a surplus beyond what they could attain through individual and independent action".** Secondly, collective action will generate economies of scale to a level that will allow producers to capture additional value from the commodity or product the farmers are producing. The presumption is that by moving up the value chain, the producers will be able to capture additional value from the subsequent stages of the value chain.

The key elements for success of coordination effort in fruit cooperatives of South Gujarat was due to strong relationship and trust with their membership which has been built over years through effective marketing support, services support and transparency of the exchange

process. The trust building is necessary considering that the control in cooperatives is decentralized amongst the membership and the ownership parties still maintain a separate identity that allows them to walk away from the exchange if they so desire (Peterson, 1997). It was observed that the performance of cooperative effort could improve further through strengthening their interface with markets and also in organizing production at the level of membership to improve economies of scale of their market offerings. Although this case study identifies factors, which are critical to the success of cooperative coordination, but the fact cannot be denied that with few exceptions many cooperatives have performed far below their potential. The selective success of AMUL and few other cooperatives including fruit cooperatives in South Gujarat suggests that cooperative coordination succeeds better than all other forms of vertical coordination provided the conditions for its success are established and maintained.

An analysis by Vaswani and Vyas (2003) suggests that the marketing cooperatives have failed to capitalize on their 'cooperative advantage' which comes to them on the strength of their local origins and has been defined to have two important dimensions- one of trustworthiness and reliability and the other of 'organising exchange' of agriculture produce on behalf of its membership. The analysis further suggests that in order to offer higher levels of co-operative advantage, which is unique to co-operatives, the marketing co-operatives have to undergo considerable 'member orientation' and establish unique 'competitive advantage' through **'organised exchange'** with its membership rather than mere 'exchange' of agriculture produce.

The other case study covered a newly emerged informal producers' organisational structure consisting of SHGs at the grass root level. The organisation known as Vegetable and Fruit Promotion Council, Keralam (VFPCK) is owned and managed by the producers (earlier known as Kerala Horticulture Development Programme, KHDP). It is registered as a Company incorporated under Section 25 of The Companies Act 1956 was found to be the most appropriate one for a developmental organization without commercial motive. The critical factors which made KHDP's 'farmer market model' to succeed on such a large scale (40,958 vegetable and fruit farmers organized in 1886 SHGs) was to do with its radically new interventions in terms of organizing SHGs, credit delivery, research and extension and marketing of horticulture produce. Its successor organization VFPCK is too new to predict its success in future. However, the KHDP experiment has provided a new

model for organizing producers (Vaswani and Reddy, 2000). The study also observed that similar success could not be achieved in organizing producers for fruit processing due to prevailing market conditions and lack of supply of suitable raw material. This model described as 'farmer factory model' in this study proved to be a case of KHDP entry and investment into an unattractive business. The corrections made in the process of implementation are likely to succeed in the longer time frame than originally planned.

6.5.1.2 Vertical Coordination – Private/Public Sector Marketing Institutions

In terms of overall approach, the private/public sector initiatives in establishing backward linkages with agriculture can be categorized into - contract farming and supply chain management. The implications both these approaches have been discussed below:

Contract Farming

The analysis of case study on 'production contract in chicory' identified few problem areas and impact it has created on the dynamics of chicory market. It was observed that in the process of helping their membership, the cooperatives lost their competitive ability and ultimately withdrew from the market in late 90s. The farmers engaged in contract farming at the time of study were satisfied while non-contract respondents who have given up contract farming reported it as an unsatisfying experience.

In the context of suitability of contract farming as an approach, an FAO study based on emerging trends in many parts of Asia revealed that farmers and agribusinesses are linking up in mutually beneficial contracting arrangements that offer producers lower market risk and greater access to inputs, financing and ensure for the processors a guaranteed supply of farm produce (FAO, 1998). Later, Eaton and Shepherd (2001) prepared an FAO guide on "Contract Farming: Partnerships for Growth" which observed that contract farming approach is widely used not only for tree and other cash crops but, interestingly for fruits and vegetables, poultry, pigs, dairy produce and even prawns and fish. The guide observed that contract farming is characterized by its "enormous diversity" and is becoming an increasingly important aspect of agribusiness, whether the products are purchased by multinationals, smaller companies, government agencies, farmer cooperatives or individual entrepreneurs. Interestingly, the guide cautions that contract farming is not a development model but a commercial one and should not be tried by aid donors, governments and non-governmental organizations.

The contract farming also brings its own negative impact due to profit maximization approach of the firms and that too in the short term. This approach combine with market power or unequal bargaining power in the contract makes it an unattractive proposition for the farmer. Even in case of chicory, the unsatisfying experience of farmers was due to low price offer and transactional problems with the contracting firms. The opportunistic behaviour of firms particularly HLL was evident from its contract pricing policy and lack of concern to improve the declining profitability of chicory based cropping systems and thereby sustainability of the contract farming with existing farmers. In fact, the HLL has already shifted part of its chicory contract farming command area to Uttar Pradesh thus deserting the farmers who have supported HLL for more than three decades. A study by the United States Agency for International Development (USAID) observed that firms do not care as they tend to move on to new growers and lands after exhausting the potential of the total resources or when productivity declines for some other reason.

Similar observations were made by Singh (2002) while studying the contract farming practices of three corporates (Pepsi Foods, Hindustan Lever Ltd., & Nijjer Agro Foods Ltd., in the Indian Punjab that contracting has initially led to higher incomes for the farmers and more labour employment but it has not been a smooth sailing for firms. Further, the contract farming is unlikely to be sustained due to lack of trust between firms and farmers and tendencies towards agribusiness normalisation and monopolisation by firms. The study findings also suggest that contract system of local firm (Nijjer Foods) is able to relate better to the growers due to its local origins. He inferred that agribusiness firms prefer to deal with relatively large producers and their contracts are biased against the farmer and perpetuate the existing problems of the farm sector such as high chemical input intensity and social differentiation. McDonald and Denbaly (.....) while analyzing concentration in agribusiness in US observed increasing usage of contracts as a method of market exchange. However, only 16 per cent of small farms had contracts as against nearly two thirds in case of very large farms. They opined that in addition to a variety of benefits. But reliance on contracting may also introduce new costs, particularly in concentrated markets with only a few buyers. The buyers may use contracts as a tool of price discrimination and may be able to manipulate thin cash market prices, which frequently form the basis for contract settlements. In short, contracts combined with buyer concentration allows buyers to exploit market power – either through lower prices that farmers receive for their products or raise the costs they pay for inputs.

Some of the studies have also highlighted problems relating to inconsistent farmers' response and need for regulation. Subrahmanyam (2000) while reporting the findings of two case studies on contract farming in gherkins and tomatoes near Bangalore by Hindustan Lever Limited (Kissan) and Sterling Agro-product Processing Private Ltd., respectively observed that the supply of inputs under these arrangements helps to prevent the drop out of farmers due to crop failures, but real benefits of savings in transport cost and commission charges have not accrued as the produce is not picked up at the fields by the processing firms. Though there is no fresh markets for gherkins, the industry still faces the problem of Red farmers (who fail to supply the produce after receiving inputs from the firm). Epur (1999) observed that given the socio-economic reality in Indian villages, the only viable system is to have vibrant, interactive, reliable contract farming. These observations follow experience of VST Natural Product Ltd., with contract farming in gherkins which brought out the need for legal and other changes to make the contract farming system effective and viable so that companies develop greater faith and trust in its utility.

In order to resolve the negative impacts of the contract farming, the involvement of a 'third party' whether governmental, NGO or private sector – was also considered important in identifying buyers and farmers and helping them to ensure "fair and enforceable" agreements (FAO, 1998). In addition, farmers need to be organized into groups or cooperatives that can use economies of scale in bargaining, coordinating supply and accessing credit and other support-services. Resource poor farmers, particularly, need support in organizing producer groups in order to increase their negotiating power and benefit from the increasing commercialisation of agriculture. Singh (2002), based on Punjab's experience in contract farming suggested that for making contract-farming system successful, organisational innovations (like bargaining cooperatives in US and Japan) are needed to negotiate equitable contracts.

Considering the fact that even in developed countries contract farming introduces new costs, the arguments of "third party" or "bargaining co-operatives" as institutional mechanisms to protect the interest of small farmers seems to be quite valid. Therefore, formal or informal group of producers organized around a common purpose will be in a much better position to align themselves with the markets and industry. The KHDP case study highlighted that producers' alliances as SHGs were able to generate economies of scale in production, pool financial resources, establish farmers own markets and generated resources and

information for member benefit. The other case studies also suggest that existing formal grass-root institutional mechanisms like village cooperatives have contributed in building effective backward linkages. The formation of grassroots institutional mechanisms like Self Help Groups (SHGs) or Common Interest Groups (CIGs), farmers associations, farmers club or any other type of farmers institution need to be formed to enhance the probability of success of establishing effective backward linkages. In the background of these arguments, the organization of formal or informal farmers institutions at the grassroots level has been suggested and included in the generic framework (Fig.6.2). The need for such a structural change acquires relevance and urgency considering reports that several corporates are increasingly becoming involved in the contract farming of agri-products to ensure better quality and minimize cost.

Supply Chain Management

On the vertical coordination continuum, supply chain oriented procurement models can be described as strategic alliances, wherein firms involved share risks and benefits emanating from mutually identified objectives. In strategic alliance coordination arises from mutual control and in a way they represent a "no man's land" between external and internal control over coordination. The partners agree to work closely together and thus must find some means to resolve internal differences and concerns (Peterson, 1977), In fact, the supply chain structure and approach begins with a different premise than traditionally used in most approaches to managing agriculture market linkage – the focus is on the function performed, not on the firm or the economic agents that perform it. A supply chain increases the interdependence among the various stages in the food chain by using strategic alliances, networks and other governance structures to improve logistics, product flow, and information flow (Boehlje...). While supporting this view Dial (1996) observed that business model in 21st century will be 'virtually integrated'. Such model for agriculture would tie together independent enterprises – the seed firm, the farmer, the processor, the distribution network and the retailer. The model would allow each player, to retain its autonomy, independence and ability to adapt quickly to new market demands.

In our case study on "Procurement of Cotton", Arvind Mills has entered into a supply chain arrangement resulting in strategic alliance between the textile mill and few select ginning and processing units.

Unfortunately, the farmers were kept out of this arrangement and G&P units were free to buy raw cotton from farmers or market yards. It is well-known that such arrangement have deprived farmers of crucial services like improved seed, credit, extension and marketing resulting in loss of economic viability of cotton production at farm level. In this context, the new models structured on partnership and tighter linkages between farmer-input supplier-the financer and output buyer is a change in the right direction.

The simplest model of Mahindra Shubh Labh Services attempts to provide services that help to improve farm profitability. The Tata Rallis initiative with credit institutions like NABARD/ICICI and marketing firms like HLL/Food world has been taken to leverage their strengths in farm inputs to bring larger benefits to the farmers. Similarly, ITC e-Choupal will add much needed efficacy to the supply chain and help farmers to increase their market realization. The e-Choupal provides an alternative route to mandi, without the compulsion of selling his produce to the corporate at a pre-determined price (ETIG, 2003). A quick evaluation done by IRMA on e-Choupal revealed that farmers have been benefited in terms of better price for soyabean, lower transaction cost and transparency of marketing operations. Interestingly, the traditional middlemen who lost their grip on the market are trying to counter ITC success through liberal credit, marginally higher price and greater transparency in pricing and weighing of soybeans (Gupta, 2003). However, these alternatives to improve vertical coordination through supply chain management do not eliminate the need for formal or informal farmer groups/organization at the grassroot level.

6.5.1.3 Agriculture–Market Linkages through Informal Sector Marketing Institutions

The commodity trade is mainly in the hands of private enterprise, commonly known as informal sector, which handles about 80 per cent of the marketed surplus of agricultural products in India (ETIG, 2003). A considerable research has been done and corresponding generalization have been drawn on the performance of informal sector in marketing of agriculture produce. However, a detailed analysis of this sector was not in the scope of this study, but, the findings of this study strongly points out towards the need for radical reforms in the existing regulated market system so as to improve conduct of informal sector marketing institutions. In fact, it has already been documented that the nature and structure of commodity trade presently gives rise

to a set of typical problems which can be summarized to "too many intermediaries, too little value addition". The effect of such intermediation by informal sector in India's food chain is manifested in several ways - one of the effects is a low return to the farmer as a percentage of the retail price and the second effect is at the retail end – food products actually cost more in India, despite of abundance of food. In the end the value addition is just 7 per cent from the farm gate and the farmer gets just about 20-30 per cent of the retail value of the food (ETIG, 2003). Similarly, the studies done by Directorate of Marketing and Inspection (DMI), GOI reveal that costs and margins account for 30 to 35 per cent of consumer's price in foodgrains, 45 to 55 per cent in fruits and vegetables and 12 to 36 per cent in oilseed crops. The results further reveal that the costs were higher when farmers adopted private channels in marketing of surplus produce compared to the institutional channels (Acharya, 2003). The market regulation which extends to 7,161 regulated markets in the country covers two aspects of marketing – development and extension of the marketing network and actual regulation of the conduct of markets has not been fully effective.

The need to strengthen the regulated market system arises from changing nature of linkages between agriculture and markets. In traditional agriculture, the different steps in production system remained relatively independent of each other because the markets were supply driven. In the emerging scenario changes in production no longer drive the market. Therefore, it is necessary to facilitate and even influence farmers decisions with regard to farm production and help them to manage their risk inherently volatile markets. It has been observed that better information flow on market price along with easy market access can bring in much desired market orientation of the production system. The farmer response to such an effort can only be gradual considering limitations of small farmers in changing their cropping pattern in the short term. What makes this flow difficult are the beliefs of traders who considers information sharing unpalatable with the fear that they may loose their market power. Therefore, ensuring fair price to independent farmer in the existing decentralised and regulated market system remains a challenging task.

The spot markets that lack substantial competition (buying and selling) are vulnerable to price distortions and manipulations. It is because, the fundamental issue is 'competition' and more so 'price competition',

which means a 'large number of buyers and sellers' (Helmuth 1999). In other words, price discovery mechanisms (spot markets) have to be strengthened so that markets are able to discover and pay fair price to the farmers. The Government need to examine its policies and regulations with a view to strengthen the marketing network and ensure that prices are being determined on a competitive basis and markets are not being manipulated. Some of the important areas in which open market system need to improve on priority basis are (Thompson and Sonka, 1997; Coffey, 1999) :

- Strengthen dissemination of market information particularly price information to improve efficiency of agricultural markets through reduction in transactions cost and market thinness
- Developing methods to objectively, accurately, and efficiently determine the qualities and values of commodities.
- Develop monitoring system to make sure that prices are being determined on a competitive basis and the markets are not being manipulated. Design policy guidelines to make markets more competitive.
- Create ways that producers can retain ownership and capture more of the value added and not be relegated to receiving the generic farm gate average price

As revealed in our case studies, the textile and coffee industry showed tendencies to by-pass open markets and restrict competition by establishing linkages with the primary processors. These linkages facilitated manufacturers and processors to pass on their price uncertainty on to the farmers. As a part of marketing reforms such tendencies of firms need to be curbed by overhauling the regulated marketing system in terms of monopolistic and restrictive practices that prevent free and competitive trade in agriculture produce. Secondly, in terms of institutional interventions, collective action through informal institutions (SHGs/Farmers' Associations) at grassroot level needs to be promoted to improve upon the negotiating power of the farmer in the marketplace.

6.5.1.4 Promoting Vertical Coordination

The case study on procurement of cotton revealed a typical setting wherein the end-use industry, i.e., textiles is competitive globally and surprisingly has not made much of an attempt to make domestic raw

material production equally competitive. The textile industry has used its market power to pressure the primary processors (ginning and pressing units) to make investments in modernizing their units and make raw material available to them at a globally competitive price and quality. The management of primary processor – farmer interface has been left to the primary processor who seems to have passed on his price uncertainty onto the producer resulting in lack of investment in quality improvement at the farm level. The declining viability of cotton production is clearly evident in decline in national cotton production to a new low during the year 2002-03. The experts connected with the production system allege that the textile industry is not doing enough to improve quality at the farm level. On the other hand, the industry feels that it has little option but to source quality raw material at globally competitive price. As a result we have uncompetitive production system and independent supply chain instead of a highly integrated supply chain.

The Government of India promoted a scheme of integrating cotton cultivation [contract farming in cotton under technology mission of cotton (TMC)] to enable the textile industry to obtain the desired quality of cotton at globally competitive prices. The programme will be managed by state owned Cotton Corporation of India (CCI) as the nodal agency in AP, MP, Gujarat and Orissa. This public intervention is in line with the understanding that the competitiveness of the industry is dependent on both the competitiveness of the individual firms and the nature of linkages between firms along the value chain. It is high time that the textile industry embarks upon a path leading to greater vertical coordination via supply chain oriented procurement model. The Government and industry should also make efforts to identify such problem sectors and sub-sectors where vertical coordination needs to be promoted for improving gains to the industry and agriculture.

The Punjab Government has been front runner in promoting agriculture – market linkage. The state is seeking the cooperation of the world's leading technology providers as well as top Indian and foreign companies, as one of the officials put it bluntly "With the inherent deficiencies of all bureaucracies, we can no longer rely on government agronomists, scientists and other departments. The state government must now start acting as a facilitator and catalyst in a series of joint ventures and encourage any enterprise that revitalises agriculture in the state." (Baig, 2003)

6.5.2 Conduct and Performance of Market and Marketing Institutions

As facilitators in the process of moving goods and services from producers to consumers, market and marketing institutions play an important role in determining the efficacy of value addition, marketing and distribution processes. The efficiency of markets and marketing institutions has far greater implications for the future of agriculture than one can imagine (Coffey, 1999). Firstly, the producer should have access to competitive market prices which can only happen when the state puts all its efforts in strengthening the competitive marketing system. At the same time, the marketing institutions need to maximise efficiency and transparency in transactions with the producers and also share of retail/consumer price accruing to the farmer. The ideal system as described by Dial (1996) suggests that 'I win, you lose' adversial supply chain is not the key to profitability and business model that will evolve in 21st century will be one that is 'virtually integrated'. Such model for agriculture would tie together independent enterprises – the seed firm, the farmer, the processor, the distribution network and the retailer. The model would allow each player, to retain its autonomy, independence and ability to adapt quickly to new market demands. The price the consumer pays for the final product would be divided among the players based on the value of their respective component part – a win-win situation for everyone.

Within these broad objectives, the specific issues which need to be resolved include i) efficacy of contract vs. spot markets and how their co-existence can improve the overall efficiency of markets and ii) to maximise efficiency and transparency of marketing institutions in their transactions with the producers. The relevant dimensions regarding both the issues are discussed below:

6.5.2.1 Open Market vs. Vertical Coordination

Number of studies from developed countries indicate that as the practice of contract selling increases, the efficacy of centralised spot or auction markets to discover fair price will decline. In addition, the firms can also use their market power to manipulate cash market prices, which frequently form the basis for negotiating contract price. For instance, the chicory production contract case study showed that opportunities did exist for price manipulation when contract prices are linked to spot market prices.

The scale of operations through contract farming is not too large to be a cause of immediate concern. However, this caution is being raised considering the experience of other nations who have already gone through the cycle of open markets to integration of varying magnitude. These experiences suggest that the neglect of 'market system' by forcing agriculture into contracts and integration can lead to pricing inefficiencies particularly at local/regional level. The viewpoint further suggests that industrialisation of agriculture is not inevitable nor is inherently more efficient than one based upon independent producers and an open and decentralised market system (Coffey, 1999). Under these circumstances, government should constantly strive to strengthen price discovery mechanisms (spot markets) to be able to discover fair price and provide an efficient benchmark for farmers to negotiate price under any contract farming arrangement.

6.5.2.2 Conduct and Performance of Marketing Institutions

As indicated earlier, the marketing institutions need to maximise efficiency and transparency in transactions with the producers and also share of retail/consumer price accruing to the farmer. The case study of fruit cooperatives in South Gujarat suggests that cooperative marketing institutions seems to have achieved higher level of perfection in backward integration resulting in high satisfaction levels amongst its membership. However, cooperatives will have to constantly find new ways and means to improve upon their marketing capability to contain possible discontent in the membership with growing competition and ability of the private sector to offer matching benefits. The other case study relating to KHDP has proved that it is possible to create new models of informal and independent farmers' institutions (other than promoted by state) to benefit small farmers typical to Indian agriculture. This farmer driven model could make need based interventions to resolve organizational problems and also the problems encountered by in carrying their produce from farm to market.

On the other hand, the case study on chicory contract farming revealed that HLL gave a go-bye to its own lessons as highlighted by Datta (1996) while sharing Brook Bond Lipton India Ltd. (Now HLL) experiences in building linkages with agriculture. The five important lessons learned by HLL were:

- Demonstrate new technologies continuously to initiate change,
- Establish exacting quality standards right from inception of the relationship,

- Incorporate a range of relevant inputs, and not just raw material, through a combination of technology, service and networking,
- Invest in building farmer's trust through mutuality of benefits, and
- Upfront investment in processing is the surest way of reassuring farmers the company's commitment.

Similarly, the case study on 'Cotton Procurement' clearly brought out the opportunistic behaviour of manufacturers and primary processors (G&P units) in keeping farmer out of their supply chain arrangements and pass on the entire price uncertainty/risk onto the farmer. The alternative route of closely working with farmers to improve productivity and quality of cotton and make production system globally competitive was not thought off nor put to practice.

The observations made with regard to conduct of marketing institutions clearly suggests that we are still in 'I win, you lose' situation at least when it comes to agriculture-market linkages through private sector marketing institutions. However, the conduct of all types of marketing institutions should proceed in the direction described by Dial (1996) wherein "The price the consumer pays for the final product would be divided among the players based on the value of their respective component part – a win-win situation for everyone". However, the learnings from the case studies suggest that this can be achieved through multiple interventions, viz., market regulation, promoting informal or formal farmers' institutions at grassroots and transparent price discovery mechanisms in spot markets. It is suggested that price discovery mechanisms can be improved further through establishment of futures market which will encourage more private trade and generate relatively stable price signals for spot markets to indirectly benefit small farmers.

6.5.3 Demand Generation through Value Addition

The most common observation repeatedly made with regard to value addition of agriculture produce in India is about its higher rank in total production of many commodity groups as compared to other countries but its lower rank in terms of the proportion of produce commercially processed, e.g., only less than 2 per cent of fruits and vegetables production is commercially processed in contrast to 30 per cent in Thailand, 70 per cent in Brazil and the US, 78 per cent in Philippines and 83 per cent in Malaysia (FICCI, 2002). The FICCI document also states that 'In India it is a truly astounding case of neglect, where the value addition to food production is only 7 per cent compared to as much as 23 per cent in China, 45 per cent in the Philippines or 188 per cent in the UK.

The expert opinion indicates that some of the factors like low per capita income and low savings rate of the population and low growth of these economic factors are constraints. Add to these woes, centuries of tradition and culture with firm affinity native foods and a host of restrictive and punitive food legislation is hampering whatever little innovative ability and initiatives left with the food industry (Potty, 2003). This view point is supported by other service which point out that the main hindrances in promoting value added products in India is the fact that Indian tastes have not changed significantly to create demand for new products. Therefore, upward movement of the agricultural produce in the value chain will be gradual and has to be carefully guided. The 250 million strong middle class of dual income nuclear families in the country with high disposable income holds the key to the future of the food market.

The range of products which dominate the food industry landscape in the country include edible oils, white sugar, tea and coffee, marine products, wheat products and dairy products. Though the market for processed and packaged foods is of the size of, US$21.43 billion, a closer look will reveal that larger volume business is based wither on foods with minimum value addition or exports (Potty, 2003). While stating that the structure of Indian food markets consists of processed foods at 6 per cent, semi-processed 16 percent and nearly 78 per cent as unprocessed, it was pointed out that there is a big opportunity to grow processed foods which are still a very small proportion of the overall largely commoditised food market (Bagga, 2003).

The above observations clearly state the need for more and appropriate value addition to generate demand for products manufactured by food industry. The other problem lies in the narrow definition of value addition that is generally understood in terms of value addition through transformation of commodities into products. However, in agriculture, the opportunities for value addition exists both at the level of marketing and/or through agricultural raw materials. Therefore, it is necessary to understand better the possible scope of value addition and processes through which such value addition can be achieved.

The marketing route will be primarily based on a set of marketing practices applicable to many other products provided the products meet the basic needs of good taste variety (easier to purchase, prepare and eat) and affordability. Lately, nutrition and safety have also become important consumer concerns. Although not much work has been done

on value addition in this study, but, market trends and analysis suggests that the process of value addition in agriculture can be broad based to cover all forms of value addition including branding commodities, primary processing and manufacturing highly differentiated products. Further, the efficacy of any value addition process should become an integral part of this process as judged by its capacity to generate demand. This process can be well illustrated in the efforts of a Assam Tea Company which is attempting to decommoditise tea in a bid to add value. The company claims that it is "recreating and redefining markets in the value addition space" through "white tea", a totally new product. Secondly, the company has established tea bars, which offer range of teas in new formats including tea for children spiked with fruit juices and dollops of ice-cream toppings. As per the company claims, these new tea formats has resulted in a wider bandwidth of consumers.

The other dimension of value addition through production of differentiated raw material will become important with increase in productivity and production of staple foods and declining concerns for food security. In the changed circumstances, the process of diversification will have greater chance to succeed provided agriculture produces raw materials for a much broader set of industries which in turn can facilitate manufacture and consumption of more and more consumer and environmental friendly products. In other words, the differentiated raw materials (on the basis of nutritional value or chemical composition) will facilitate development of differentiated products.

Traditionally, agriculture has been a raw material supplier, primarily for the food and to some extent to the fibre and textile industry. In order to substantially expand the role of agriculture in the overall economy, the use of agricultural products as raw material should expand to new sectors of economy. This will require investments in R&D particularly bio-technology which can bring in radical expansion in potential uses for agricultural raw materials, e.g., agri-biomass to bio-fuel, jute as geo-textile, etc. Further opportunities in this direction can be explored objectively by segmenting the markets for agricultural raw materials on the basis of their end-use Table 6.1

The use of end-use criteria, six segments in two major categories seems to emerge, viz., household, institutional (engaged in ready-to-serve/ ready-to-eat segment), agro-exports in high-moderate growth category while food processing, industrial and feed and fodder in moderate-low market growth category. The analysis shows that each of the segment

Table 6.1: Identifying Opportunities for Agricultural Raw Materials through Market Segmentation

High –Moderate Market Growth	Moderate-Low Market Growth
Household	Food processing
Institutional	Industrial
Export	Feed & Fodder

presents an opportunity of its own as already happening in health and pharmaceutical products (industrial segment). This approach will facilitate diversification of agriculture to improve its capacity to produce raw materials/products with specific attributes for unique end-use markets and in turn trigger the process of "demand generation through value addition". The challenge lies in shifting stable or slow growing segments into growth segments through indentification of unique opportunities.

6.6 Issues and Inferences

The changing task environment is leading to change in priorities of Indian agriculture in the 21st century. In the emerging scenario, the core concern has to shift from 'food security' to 'productivity and diversification'. However, national food security will continue to remain a secondary concern until the problems of 'household level food security', 'nutritional insecurity' and 'regional imbalances' are resolved to a satisfactory level. In addition, the Indian agriculture will have to respond to new concerns like 'sustainability' and 'consumer preferences' as we step forward to create new opportunities for farmers, processors and consumers. It will be possible to address these concerns through greater market orientation of agriculture, that is, achieving tactical balance between demand and supply on one hand and greater synergy between important agricultural sub-systems, (R&D, extension and markets) on the other hand. In the process, adequate care will have to be taken to prevent its adverse impact, if any, on employment generation and food security. The interface between agriculture – markets need to be streamlined further through interventions like dissemination of market information, promoting competition and transparency in agricultural produce markets and establishing linkages with agro-processing sector.

The transformation of Indian agriculture on these lines has already begun, though it is still at nascent stage. A number of initiatives have

already been taken on selective basis to achieve vertical coordination between agriculture and industry. These arrangements primarily include contract farming and supply chain management in varying configurations through strategic alliances. The farmers owned and managed organisational arrangement includes informal structures like SHGs and higher order vertical coordination through cooperatives. The case studies observe that agriculture-market linkage through open markets, which represents the most prevalent form of linkage in India, needs reforms to overcome monopolistic and restrictive practices so as to allow free and competitive trade in agriculture produce.

With these considerations and other realities of Indian agriculture like smallholdings and inadequacies in quality of crop husbandry and relatively rigid food consumption patterns, a generic framework for agriculture market linkage was hypothesised. The framework identifies three important *core processes*, which seem to be critical in establishing effective agriculture market linkages. These processes are i) building effective backward linkages, ii) conduct and performance of markets and marketing institutions, and iii) demand generation through value addition. Any attempt to improve interdependency of agriculture with *market/industry* will be determined by the success and failure of these processes with due consideration to the externalities which will influence these processes. The case studies also led to identification of possible interventions, which can improve the efficacy, and impact of these processes.

In establishing backward linkages, the scope of possible interventions includes quasi-legislation with regard to contract farming, promotion of alternative vertical coordination mechanisms like multi-agency strategic alliances, cooperatives and open market reforms to promote competition and price discovery. In addition, the backward linkages can also be strengthened through institutional interventions in the form of SHGs at the grass-root level to improve small holders' economies of scale, establishment of farmer markets to provide direct market access to farmers and agricultural futures to strengthen price discovery mechanisms. Secondly, the conduct of markets and marketing institutions can be improved through regulation, competitive setting and favourable policy environment leading to free and fair trade in agricultural commodities and products. The third critical process in building effective agriculture-market linkage is of 'demand generation through value addition' either through marketing and/or agricultural raw materials. The value addition through marketing can involve

practices like commodity promotion programmes, branding commodities, primary processing and manufacturing highly differentiated products. The other dimension of value addition through differentiated raw materials (nutritional/chemical composition) will have greater chance to succeed provided agriculture attempts to tailor raw materials for a much broader set of industries, in addition to its traditional base, to facilitate manufacture of more and better environmental friendly products like bio-fuel and geo-textiles. The opportunities to produce such new products can be explored through segmenting the markets for agricultural raw materials on the basis of their end-use. The six distinct segments, which present an opportunity of their own are - household, institutional (engaged in ready-to-serve/ ready-to-eat segment), agro-export, food processing, industrial and feed-fodder. It is expected that such market-oriented diversification of agriculture will improve its capacity to produce raw materials/products with specific attributes for unique end-use markets.

The generic framework detailed above would require certain new policy initiatives within the framework of national agricultural policy. Simultaneously, it will also require appropriate programmes and schemes towards implementation of the existing and new policy provisions and achieve broader objectives of the agriculture policy. At the macro level, there is a need to make agriculture more responsive to demand, i.e., achieving greater market orientation. Such orientation will require policies, which will enable information, technological and marketing support to farmers. The Agriculture Market Information Network (AGMARKNET) has already been launched. At operational level, the generic framework identifies the process of establishing effective backward linkages to achieve this objective. The sub-processes which will need policy support include strengthening open marketing system for agricultural commodities and promoting vertical coordination between agriculture and industry in cases where the end-use markets have very specific raw material/product requirements. With regard to open markets, the government should remove all hurdles in freer movement of commodities apart from ensuring competition and technical improvements in trading. The new institutional mechanism like farmers' markets and agriculture futures will go a long way in improving the efficiency of the commodity marketing system. The policy support should also be provided to strengthen institutional mechanisms like SHGs and cooperatives to strike a balance in the market power of

farmers owned and privately owned agribusiness firms and improve their conduct in the marketplace. The recent changes in the national policy on cooperatives to enable them to work as autonomous, self reliant and democratically managed institutions needs to be implemented rigorously.

The vertical coordination is gradually catching up to control quality and market risks and the stage is ripe to promote vertical coordination in commodities like cotton where benefits are going to be large. At the same time, the state needs to introduce necessary amendments to the existing APMC Act and also come out with a model legislation to promote vertical coordination through contract farming and supply chain management initiatives. The study advocates favourable policies for value addition in agriculture through both marketing and production of differentiated agriculture raw materials. The agro-processing route has been getting policy support for quite some time, but results have not been very encouraging. The need is to understand the reasons for such policy failure on one hand and also promote value addition in other market segments wherein differentiated agricultural raw materials can be used to improve probability of successful diversification of Indian agriculture. There is a need to undertake new research in these areas to get at these important questions.

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