

# Towards Accelerated Growth in Dairying

An Action Research to Improve the  
Traditional Milk Sector

Khammam, Andhra Pradesh

## Process Document



SECURE





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### Action Research

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## **Process Document**

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## Abbreviations



AP	Andhra Pradesh
APDDCF	Andhra Pradesh Dairy Development Cooperative Federation
AR	Action Research
CALPI	Capitalization of Livestock Programme Experiences India
CBO	Community Based Organization
CMS	Catalyst Management Services Private Limited
DIIS	Desktop Interactive Information System
DAH	Department of Animal Husbandry
DRDA	District Rural Development Agency
FAO	Food and Agriculture Organization
HH	Households
IC	Intercooperation
IIMA	Indian Institute of Management, Ahmedabad
ILRI	International Livestock Research Institute
ISAP	Indian Society for Agribusiness Professionals
KI	Key Informant
LACG	Local Actions Core Group
lpd	Litre per day
MBRT	Methylene Blue Reduction Test
NDDB	National Dairy Development Board
NDRI	National Dairy Research Institute
NRMPA	Natural Resources Management Programme Andhra Pradesh
OMS	Organised Milk Sector
PPLPI	Pro-Poor Livestock Policy Initiative
PRA	Participatory Rural Appraisal
RRG	Research Reference Group
SDC	Swiss Agency for Development and Cooperation
SH	Stakeholders
SHG	Self Help Group
SMILDA	State Management Institute for livestock Development - AP
SNF	Solid Not Fat
TMS	Traditional Milk Sector
ToR	Terms of Reference
TS	Total Solids

# Acknowledgements

The Action Research (AR) to Improve the Traditional Milk Sector was undertaken in a truly participatory process bridging the gap between the deciders and the doers. People affected by the decisions actively joined those who planned the processes, carried them out and steered them. The AR generated active participation of all stakeholder categories and therefore, a long list of contributors truly deserve the gratitude of the Action Research Team. The number of such organisations and individuals is too large to mention here individually. The AR team is grateful to all of them.

The Research Team sincerely acknowledges the contributions of hundreds of milk producers, market intermediaries, consumers and processors. The AR functioned under the overall guidance and supervision of a multi-stakeholder Steering Committee called the research Reference Group (RRG) under the Chairmanship of the Dairy Development Commissioner, AP and Managing Director, Andhra Pradesh Dairy Development Cooperative Federation, (beginning with Mr. P.M. Kuriakose, Mr. Neerab Kumar Prasad and Mr. Adhar Sinha). The AR Team is grateful to those from the Animal Husbandry Department like Dr. L.Mohan, Director AH, Dr. Ravikumar, Additional Director, Dr. B. Anantham and Dr. M.D. Zahuruddin, Joint Directors (SMILDA) as also those of the Andhra Pradesh Dairy Development Co-operative Fedration like Dr. Hanumantha Reddy and the officers of the DRDA, Khammam who contributed immensely to this change process. The team also acknowledges the contributions of the Swiss Agency for Development and Cooperation, Intercooperation, CALPI, the National Dairy Research Institute, the International Livestock Research Institute, ACTIVE, SECURE, the Natural Resource Management Programme of SDC and a vast number of others. Without their help and support, it would not have been possible to develop a balanced understanding of the ground realities with respect to the Traditional Milk Sector.

## Other Major Contributors to the AR

- |  |   |
|--|---|
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**N Raghunathan**  
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and  
Team Leader, Action Research Team



## Foreword

The Swiss Agency for Development and Cooperation (SDC) and the Intercooperation (IC) have been actively involved in livestock based livelihoods and natural resource management in India for many decades. CALPI (Capitalisation of Livestock Programme Experiences India) capitalises these vast experiences, competencies and partnerships to positively influence the economic, administrative, legal and policy frame conditions affecting the poor livestock keepers, both men and women. One of the thrust areas of CALPI, Livestock Products Marketing, aims at improving the market access for the poor livestock keepers in the backward areas of the country.

The Action Research (AR) to Improve the Traditional Milk Sector (TMS) is the sequel to a desk study on the sector. It followed a multi-partner consortium approach among CALPI, the Catalyst Management Services (CMS), Bangalore, the Dairy Development and the Animal Husbandry Departments of the Government of Andhra Pradesh, the National Dairy Research Institute (NDRI), Bangalore, the Action for Collective Tribal Improvement and Vocational Education (ACTIVE), Khammam, the Socio-economic and Cultural Upliftment in Rural Environment (SECURE), Khammam and the International Livestock Research Institute (ILRI), Nairobi. Its main objectives were to understand the dynamics of TMS and to experiment community identified spontaneous field actions for improving the sector.

Action Research was identified as an effective tool in areas like TMS, where the practices are rather intricate and difficult to study and understand. It was also considered fit to penetrate the prevailing attitudinal barriers and win the confidence of different players to capture a true picture of the operations. The tool has served well in achieving these goals. Many of the actions taken up together with the community produced good results. It also led to drawing up a road map for further technology, management and social innovations to be pursued to improve the market access for milk in the low producing backward regions of India.

This initiative amply testifies that Action Research can be applied well in a wide spectrum of rural livelihood issues especially in regions where support from Govt. and other development agencies are difficult to come by. This is also a powerful tool capable of identifying and mitigating together with the stakeholders, a vast number of small deficiencies, constraints and gaps confronting the rural poor, both men and women. AR permits an open flexible approach in understanding and applying improvements at every learning cycle. This document is meant to disseminate the process followed for the AR and the enormous learnings from it to those engaged in addressing complex rural livelihood issues. We trust that this will find ready acceptance by the people concerned with such development.

**Francois Binder**  
Country Director,  
Swiss Agency for Development and Cooperation (SDC)  
New Delhi



## **Towards Accelerated Growth in Dairying**

An Action Research to improve the Traditional Milk Sector

# **Process Document**

### **1. Introduction**

Dairying is one of the most important livelihood options for the rural poor in India. India's growth in the dairy sector has been phenomenal and has enabled it to claim the position of the largest producer of milk in the world. The growth of dairying in India has been spearheaded by the Operation Flood Programme of the National Dairy Development Board as also other programmes supported by both the central and the state governments. Lately, the private sector has also started contributing to this growth by extending market access for milk in a wider area.

Over the past 30 years, the major focus of growth in this sector has been the Organised Milk Sector (OMS). However, the OMS contributes to only an estimated 23% of the milk marketed in the country (2005-06). The largest supply of milk is through the Traditional Milk Sector (TMS), identified by small farmers, market agents and traditional processors. TMS extends livelihood options for the poor producers in backward and low producing areas. It assures supply of milk to middle and

lower-middle class consumers in a vast majority of smaller towns. Despite its large size, spread, reach and impact potential, this sector remains largely neglected in terms of capital investments, recognition, research and exploration.

In view of the criticality of the TMS as a sustainable livelihood option for millions of rural poor producers and suppliers, CALPI felt the need to intervene in this sector for which it needed to understand the operations of the sector. With the technical support of the Pro-poor Livestock Policy Initiative (PPLPI) of FAO, CALPI commissioned the Indian Society for Agribusiness Professionals (ISAP) to conduct a desk-study of the traditional milk market. The study identified some of the strengths, deficiencies and data gaps and highlighted the need for a comprehensive study of the TMS to understand its functioning. The desk study concluded that the unorganised market agents are likely to continue playing critical roles in the marketing of milk and is important to understand the dynamics of the market and the behaviour of various market agents so as to capitalise on their strengths for the

benefit of the poor rural producers and for the urban consumers.

Realising the peculiar nature of TMS and the difficulties in ensuring the accuracy of the information to be collected, CALPI initiated discussions on the mode of research to be undertaken with a wide spectrum of consultants from organisations



*Milk production holds high priority in the selected villages*

like IIM Ahmedabad, PPLPI, International Livestock Research Institute (ILRI) and the National Dairy Research Institute (NDRI). The discussions led to a consensus on integrating both qualitative and quantitative methods through an Action Research (AR). The Action Research methodology would provide an understanding of the dynamics of traditional (informal) milk market and the identification of partnerships and interventions for improving the sector.

After a great deal of consultation and assessment of many agencies capable of undertaking action research, CALPI approached Catalyst Management Services, Bangalore because of their vast experience in Action Research, a clear understanding of the development sector and their work in development. In February 2005, CMS was commissioned to undertake an action research.

## 2. About Action Research

A research study generally details its purpose, scope, methodology, timelines and budgets at its outset. An Action Research, in contrast, is designed in participation with the stakeholders who carry the AR forward. The development

of the proposal and the design of the AR in the TMS ran parallel to the initial field processes. The entire development of the AR was guided by the Research Reference Group (RRG), the institutional mechanism created to support, steer and oversee the study.

So active and dynamic was the process of designing the action research, that the proposal went through four months of consultations and six rounds of modifications before it was finalised. A high level of participation and contribution from all of the RRG members during the process provided the basis for refining the study design and, subsequently the proposal.

During the initial months, in addition to developing the scope and methodology of the study, an understanding of the AR was also developed.



*The action research applied a vast array of tools.*

“Action Research is defined as a flexible spiral process that allows action (improvements, changes) and research (understanding, knowledge) to be achieved at the same time. At each stage, the strategies, methods and activities are looked at, reflected upon and the why’s and how’s of the changes are identified. This understanding allows more informed change and at the same time is informed by that change. People affected by the change need to be involved in the action research. This allows the understanding to be widely shared and the change to be pursued with commitment.



As per the principles of action research, the study will seek to remove the gap between deciders and doers. Those who are affected by the decision (primary stakeholders like milk producers and consumers, channel partners, etc.) will join those who will carry it out and those who plan and regulate these processes (like NGOs, municipal authorities, CBOs, dairy development officials, CALPI, others). Decisions are therefore taken together, through collective reflection. The process of research therefore is important, and this process will be done in such a way that it generates participation and guarantees commitment for action. Therefore, the first step in the research is very important, i.e. to identify stakeholders and their interests, and the way they can participate in the research.

Action research could start with quite imprecise research questions. Imprecise questions and methods can be expected to yield imprecise answers initially. Those imprecise answers can help to refine questions and methods. Each cycle can be a step in the direction of better action and better research. A set of strategic checkpoints are identified wherein stakeholders come together to look at findings, analyse them and generate knowledge out of these.”



*Learning begins by understanding the village better- a PRA in progress.*

Based on this understanding of action research, the other principles that follow suit are:

**Participatory learning and action**, whereby, the study seeks to be a

facilitative tool towards learning for different stakeholders, rather than be an information collection and analysis by external agents. Implicit in this principle is the need to involve all of the stakeholders in the study.



*I need only half a glass of milk for my tea*

**Rigour in action research through a continuous process of reflection and action**, would have to be ensured, considering the flexibility of the research design. To realise the outputs of ‘achieving change’ and ‘understanding them’ simultaneously would demand critical reflections at strategic checkpoints during the process.

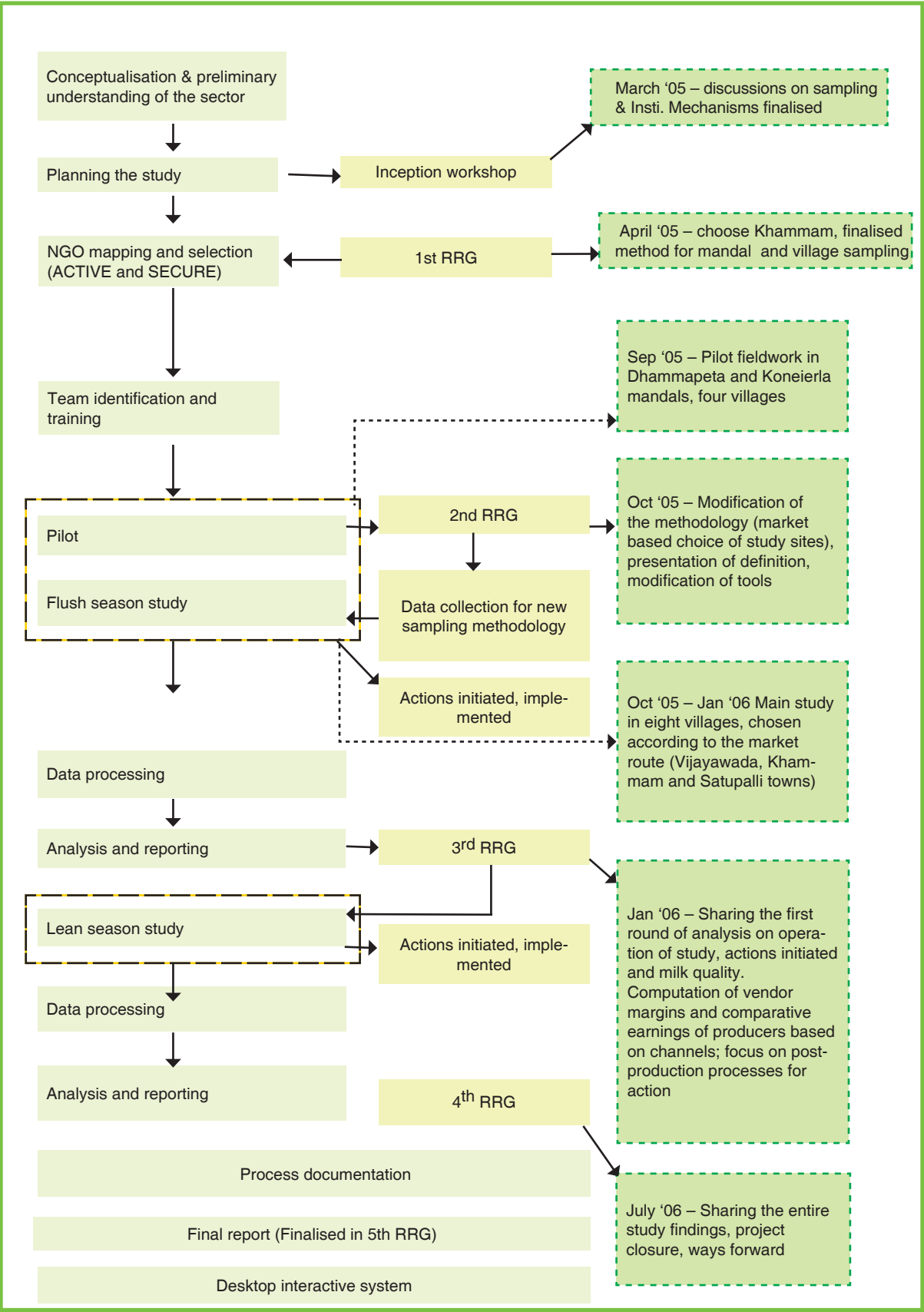
**Representation of different profiles**, to understand what works well, for whom, and in which situations.

**Evolving process**, which are imprecise at first, but are moulded into a definitive shape as the action research proceeds.

**Self designed, voluntary and egalitarian**, processes that are designed by the actors themselves.

**Fig. 1** describes the broad steps of action research process, spread across one and a half years.

Fig. 1: Action Research Process



### 3. Designing the Action Research

The initial process of conceptualisation of the study and the preliminary understanding of the sector involved intensive discussions with CMS and CALPI. During these discussions, the ideas on the study were generated, discussed, modified and the final design of the action research methodology took shape.

Many processes were in operation simultaneously at the initial stages. Desk research was undertaken to get an understanding of the milk market in the country and formed the first round of sampling for the study. Planning processes were initiated that included defining the traditional market; the timeline for the study; selecting a study location – the first round of sampling; mapping and identifying NGOs for field operations; developing the information collection processes; building and orienting the team; and piloting the study. An inception workshop was organised on 31st March, 2005 to share and finalise many of these methodological issues.

#### 3.1 Defining the traditional market

During initial interactions, the discussions revolved around understanding what the traditional market comprised of. Defining the traditional market was necessary to draw the scope of the study. How could the dynamics of a traditional market be studied, if there was no clarity on what constituted a traditional market?

At the inception workshop, the participants debated the definition of a traditional market. While there was clarity on a formal market – organised sector, including co-operatives and private dairies, there was some confusion on what could be termed 'informal'. Several possible ways of defining this segment were considered, based on the type of packaging, processing, volume cut-offs. The issue of large volume, non-processed milk in urban areas by private milch animal owners was given as an

example to highlight the difficulty of arriving at a definition. This group could not be seen as operating in the traditional market, and yet would not qualify as operating in the organised market.

The workshop concluded that all of the discussed parameters might not be sufficient to define informal and traditional markets. Initially, for the purposes of the action research, the focus would be on the actors (e.g. producers, middlemen) in rural areas who were not fully part of the co-operative, government or private dairy markets.

#### Box 1: Definition of the traditional milk sector

The traditional milk sector is characterised by:

- Loose form of supply (or use of bottles, cans, plastic papers etc.).
- Absence of any scientific method for checking and ensuring quality.
- Absence of a quality based pricing
- Informal/oral record keeping
- Channel – mostly vendors; or direct supply
- Not regulated/licensed (or) regulations/licenses not enforced strictly
- Traditional methods for operations (cream separation, ghee making,...)

As the study progressed, there was a greater understanding of the traditional sector and CMS was able to present the preliminary definition of the traditional milk market during the 2nd RRG meeting as given in **Box 1**.

This definition was seen to be reasonably accurate and a representative of the ground reality. The only part that was unclear was the regulation in this sector. Was the sector not regulated? Or were regulations not enforced? The RRG felt that more information on this may come in from the field.

#### 3.2 Timeline

The study had to be carried out across two seasons—the flush and the lean. The flush season extends from October to May when the production is high and the lean season runs from June to September when the production of milk drops by almost 50%.



In the milk market this change in supply is significant since there is no corresponding change in demand for milk. The lean season also extends across parts of the summer months during which risks of spoilage increase with the consequent shortening of the cycle of procurement to supply. These factors – supply, temperature – are likely to affect the practices. The study covered both seasons to ensure that all factors that affect the operations of the traditional market would be explored.

At the time when the study was commissioned, the lean season was in operation. The study was supposed to cover the lean season first, and subsequently cover the flush season. It was expected that the action research would be completed by January '06. However, the design of the action research underwent a string of changes and the field level processes did not begin till August '05, by which time the lean season was at its end. Thus the field level components of the action research began during the flush season and the study timelines were extended to cover the lean season from May - June and part of July '06. The three phases of the AR are given in **Box 2**.

**Box 2: Phases of the Study**

- **Phase I:** August to December '05 – the flush season research and initiation of actions
- **Phase II:** January to March '06 – consolidation of findings, reporting and continuation of field level actions
- **Phase III extension:** March to June and part of July '06 – the lean season research and initiation of new actions and continuation of the ongoing ones.

**3.3 Selecting a study location**

**Selecting the state for the study**

The original research planned by CALPI was to cover a wide area across 4 states. Since the action research sought to test a methodology through a small-scale study that could then be scaled-up, a decision to identify one state, one district therein and a few villages was made. While, exploring

the various options indicated in **Box 3**, it was found that the traditional sector in Andhra Pradesh was more dominant than the cooperative and the private sectors. Therefore, Andhra Pradesh was chosen for the study.

**Box 3: Options of states for the study**

- In Punjab, the organised sector was well developed and yield of milk was high.
- In Andhra Pradesh, the organised sector was present, though not widely developed and milk yield was moderate.
- In Orissa, the organised sector was less developed and milk yield was relatively low.

**Selecting the district for the study**

A method of elimination was used to shortlist the districts of Andhra Pradesh (**Fig.2**). Districts where the cooperative dairies under the National Dairy Development Board's (NDDB) umbrella and the private dairies were dominant players were discarded from the list. There was a concern that a study of the traditional sector would be in conflict with the NDDB's cooperative mandate and, at least initially, needed to be located away from it. To begin with, a shortlist of the districts having a large traditional sector was prepared.

The CMS team then visited the Joint Director Animal Husbandry Department, Chitoor and the Director, Animal Husbandry Department of Andhra Pradesh. The team learnt that a large traditional sector operated in Nalgonda, Prakasam and Vijayanagaram districts. The three districts were evaluated based on the presence of the traditional and the organised sector, indicated in **Box 4**, and Nalgonda district was found to be suitable for the study. In addition to Nalgonda, Chitoor was also short listed as a potential study district since it had a high production of cow and buffalo milk. One of these two districts needed to be chosen for the study.

Secondary sources were first used to get an idea of the milk market, including the dairy animal population, milk production, the extent of the traditional market, per

**Box 4: Options of districts for the study**

- In Prakasam district, there was a strong presence of milk cooperatives and NDDB.
- In Vijayanagaram district, the presence and operations of cooperatives was low.
- In Nalgonda, both the traditional and organised sector were operational.
- In Chittoor district, there was high production of cow and buffalo milk.

capita milk consumption, demographic profile of Nalgonda and Chittoor. The CMS team then visited the districts and had discussions with the senior officers related to the dairy industry - Animal Husbandry Department, Panchayati Raj Institutions, Government Dairies, District Rural Development Authority (DRDA), the District Poverty Alleviation Programmes (DPEP) and the NGO networks. From these sources they sought information on the number of animals, number of private dairies and the number of dairy cooperative societies (registered and unregistered). The names and contacts of the NGOs working in the dairy and animal husbandry sector were also collected since they would have a key role of facilitating the development and implementation of actions required at the field level. Formal participation of all

institutions related to the milk market and livelihoods development was mandatory to drive and direct the action research.

**Box 5: The inception workshop**

The inception workshop, organized by CALPI was held on 31st March 2005. Participants to the workshop included representatives of the state government, CALPI, SDC, NRMPA, IIM, PPLPI, NDRI and CMS. The workshop was conducted to take stock of all the activities and proceedings till end of March '05 and achieve a common understanding on the ways forward. The workshop aimed to arrive at:

1. Clarity of concepts and a uniform understanding amongst the partners about the proposed action research,
2. Consensus on the proposed methodology and the steps involved in the action research,
3. Modalities for partnership and coordination mechanisms amongst the different partners,
4. The stakes and roles of different partners to be involved in the action research,
5. Tentative action plan and time frame for undertaking the research.

The information thus collected was presented at the inception workshop **Box.5**. Participants at the workshop felt that greater rigour was necessary towards identification of the district and one more round of data collection and analysis ensued before the district was finalised.

Discussions during the inception workshop focussed on the sampling methodology. The selection of AP as the sample state found favour amongst the participants. However, the participants felt that a more systematic effort was required to identify the study district.

Following this decision, a chart giving the comparative data on the prescribed parameters was prepared from the data collected from APDDCF and the Department of Animal Husbandry (SMILDA). CMS

*Fig.2 Districts of Andhra Pradesh*



**Box 6: Criteria for district selection**

- Livestock population.
- Milch animal population–cows and buffaloes.
- Seasonality of production – flush and lean.
- Quantum of milk handled through the organised sector.
- Number of collection centres under the organised sector.
- Availability of the organised sector dairies – cooperative, private.
- Quantum of milk handled through traditional sector.
- Proportion of milk handled through traditional sector.
- Pockets within the district that produce large quantum of milk products sold through traditional channels.

also had detailed discussions with the staff of APDDCF and the DAH to get the information related to other criteria such as flush and lean season particulars and the urban pockets.

Amongst a host of criteria laid out for sampling, indicated in **Box 6**, the final criteria considered for short-listing the

districts was the estimated milk handled by the traditional sector. This figure was drawn from the estimated total milk production, milk handled through government dairies, private dairies, milk unions and the milkshed as a whole. Based on this exercise, Khammam district was selected.

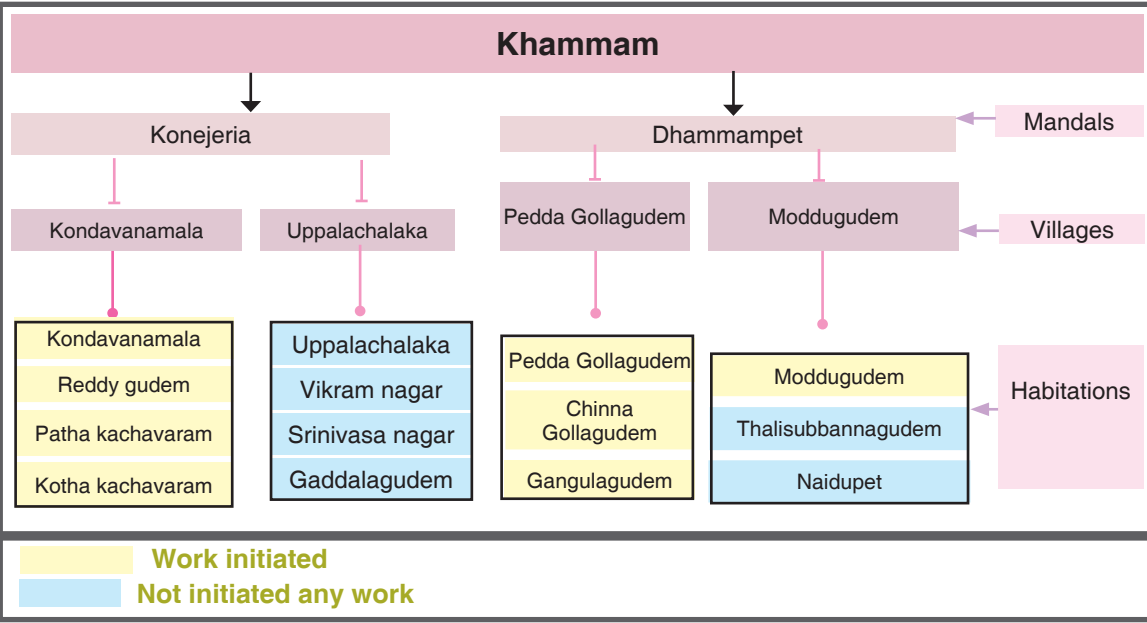
**Selecting the mandals and villages for the study**

Once Khammam district was selected as the study district, the mandals and villages were identified. The field team visited the district AH department office and collected the mandal level data based on the guidelines drawn up at the inception workshop. The Joint Director AH of Khammam was very cooperative and readily provided the required data.

As per the guidelines evolved in the first RRG meeting, **Box.7** the selection of mandals and villages within Khammam was made as follows:

All mandals having high irrigation, high percentage of cross bred varieties and higher than average percentage of high yielding animals were first eliminated.

*Fig:3 Selection of mandals, villages and habitations*





#### Box 7: Criteria for Village selection

- Average size of village.
- Cow-buffalo spread.
- Socio-economic profile – SC/ST.
- Two habitations- one SC/ST & another heterogeneous.
- Producer level stratification (volume, type of milk, socio-economic)

The sample was then developed to ensure representation based on a mix of formal and informal procurement (one with large and the other with small procurement), market access, dry and irrigated agricultural economy and socio-economic profile – SC/ST.

Presence of NGO/CBO/CSOs was an important factor, since their presence was necessary for a village entry and for the facilitation and implementation of the actions.

Based on these guidelines, Dhammapeta and Konejerla mandals were selected. In each mandal, two revenue villages (comprising 3-4 habitations each) were finally selected. Details are furnished in **fig 3**. The RRG at its first meeting approved the selection paving the way for commencement of the field level processes. During the pilot, a study was initiated in eight of the chosen habitations.

#### Selecting the sample for the consumer study

The research covered the entire chain of the traditional milk sector from producers to consumers. The bulk of the consumers were located in the semi-urban and peri-urban areas. Consumers were found to be in the district headquarters and sometimes in a city, which was located in another district. During the Inception Workshop, it was decided that the study would cover consumers and intermediaries in a small town near the selected villages, in the district headquarters, and a big city where milk and milk products flow. A channel mapping was undertaken in the selected research sites based on which Satupalli town, Khamam town and

#### On the Study Location

“Dr. Vijay Paul Sharma of IIM raised the issue of milk markets such as Delhi and Punjab, which have a strong informal route, with volumes being high. He felt that these are markets that should not be ignored. The discussion that ensued, concluded that the Action Research should be held in one state, one district and few villages initially and then build a methodology that is replicable and can be carried out in any state. The first state chosen should have a reasonable mixture of formal and informal markets and should not have any practical difficulty in implementing the research.

Dr. Sharma also raised the issue of district sampling. He felt a more systematic effort is required to arrive at the selected districts. The criteria needs to be finalised and then an adequate analysis be carried out. Shiv Kumar of CMS pointed out that the criteria chosen should be those where secondary data was easily available. He also said that the co-operation of the Animal Husbandry department and the Milk Federation is critical to put together this data. The Government representatives agreed to provide the available information.”

- From the proceedings of the inception workshop

Vijayawada were selected for the consumer study.

**Box 8** shows the final sample selected for the study. During the course of the pilot for this sample – at the mandal and the village level – the initial sample underwent a considerable change. Details of the change and factors that prompted it are given in section 3.9, finalisation of the methodology and sampling.

#### 3.4 NGO selection

In the inception workshop, the guidelines for the selection of local NGOs as indicated in Box 9 were drawn up. A list of the NGOs was collected from the DRDA, District Collectorate and the NGO networks.

Box 8: Sample for the study	
State	1 (Andhra Pradesh)
Districts	1 (Khammam)
Mandals	2 (Dhammapeta and Konejerla)
Villages	2 in each Mandal
Markets	1 big city – Vijayawada, 1 district HQ– Khammam town and 1 smaller town near the selected villages – Satupalli

Out of them, two networks fitted the selection criteria. One was a collective of 11 NGOs working on watershed management and the other, a group of 29 NGOs working on disaster preparedness. At the network meeting, the study framework was presented. Seven NGOs showed an interest in partnering on the action research and the CMS team made a visit to their offices to collect detailed information about the NGOs. Two NGOs – ACTIVE and SECURE had the required profile to work on the action research

**Mr. K Jayananda – Director, ACTIVE**

“ACTIVE works in sustainable agriculture and livestock management linked to sustainable agriculture in tribal areas. In our areas of operation, there is low yield and weak market linkage. Dairy is not an occupation of the community. There are opportunities to strengthen this sector, organise people, train them in productive techniques, market channels, etc. Livestock management is a problem that we have identified in the areas of operation, but we have not yet been able to forge linkages to address this. When we heard of the action research, we felt that it was a good initiative, one in which we will be able to learn and provide support to strengthen this sector for the benefit of producers. We could contribute by building networks, initiating platforms for advocacy and providing management and training inputs.”

and also had a presence in the sample villages. ACTIVE worked predominantly in Dhammapeta Mandal. It had the experience and understanding of the dairy sector. One of its strengths was its governance through a strong steering committee. It also had the capacity to carry out initiatives and sustain them in the future. SECURE had an understanding of the dairy activities and was already a partner of the NRMPA. It was clear of its future plans, and this action research would provide an opportunity for its strategic growth.

**Box 9: Criteria for Selection of NGOs**

- Community base in selected pockets.
- SSNGOs working in informal markets (not necessarily milk).
- Openness to accept people’s agenda.
- Focus on livestock, particularly dairy.
- Years of experience in the sector.
- Experience in Action Research.
- Experience with bilateral and multilateral agencies.
- Felt need and willingness to collaborate.

### 3.5 Information Collection

The information gathered during the action research process had to enable an understanding of the traditional sector and also evolve spontaneous actions on the part of the primary stakeholders for improving the sector. To achieve this, the information collection process focussed on:

**Information gathering for participatory learning and action, as against data collection:** The tools were geared towards facilitating discussions to extract learning and to identify spontaneous actions and potential interventions based on the experience and the knowledge of the primary stakeholders.

**Outlining the processes for tool development:** Focus was on the processes involved in information gathering and the sources of information. These would lead to designing tools suitable for the process.

**Comprehensive coverage:** on key aspects such as caste, inter-caste dynamics, dependency relations, cultural practices including taboos, religious aspects, etc.

**Mr. Venumadhav – Director, SECURE**

“The action research is a crucial study and has provided us with an opportunity to strengthen the understanding of different aspects of the village economy. The process was done well, it was participatory in nature and the community was encouraged to discuss and identify solutions to their problems. We were happy to be a partner in action research since we saw many synergies of this research with our own work in the villages.”

**Understanding the dynamics of the traditional milk markets, as against concentration on production related information:** Observing and capturing the movement of milk from the producer to the consumer and all the processes related thereof.

**Mixed-method approach:** Integration of quantitative (like the quantum of milk, share of operators, etc.) as well as qualitative (like perceptions, reasons, behaviour towards a particular operator, etc.) analysis.

**Identifying stakeholders**

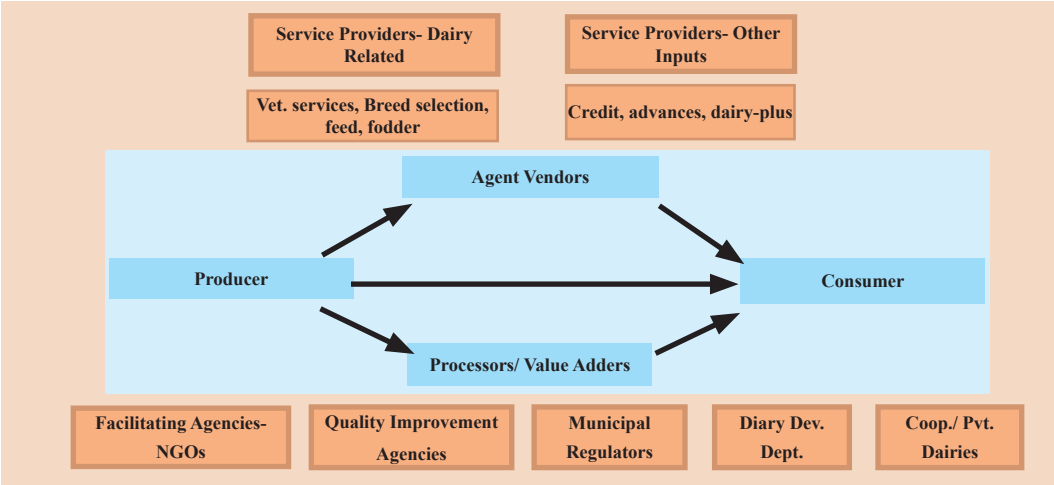
During the design of the information collection process, key stakeholders within the milk sector were identified to provide information (Fig 4). At the time of going to the field, a sample for coverage of stakeholders was not suggested. The team was encouraged to meet and observe the processes of all key stakeholders as available and relevant to the study. They were also to identify and stratify various profiles of the communities and cover the samples from each stratum.

**Designing Tools & Methodologies**

The tools were developed in two rounds. The first round of tool development was geared towards collecting qualitative information for understanding the village environment, operations of the dairy sector and for the generation of actions. PRA methodologies and focus group discussions formed the basis of these tools.

Later, during the course of the study, when the findings of the pilot were presented in the 2nd RRG, the need to have more quantitative data was felt. While the qualitative data provided rich insights to the operation of the sector, the quantitative data was essential for an analysis of the relative costs and benefits of the

*Fig. 4 : Key Stakeholders*



**Table 1: Process for Information collection and Tools used**

Process	Purpose of the process	Source of information	Tools to be used	Participants
Village Profiling	To have a preliminary understanding of the village	Key informants in the village & secondary data from NGOs, CBOs, GP, etc.	Using proforma	
Social/Resource Mapping	To have an in-depth understanding of the village; build a rapport with the community; to understand the dairy sector prevalence in the village; various institutions, culture and practices; Initiate the process of AR ; map the key players.	The community	Social Map technique, Livelihood analysis, Stakeholder Analysis	Community members of all age groups and gender
Walk around the village	For observing and understanding the village dynamics related to dairying and other related issues; to validate the process of Mapping	Elders in the village	Observation and Transacts Walk	Community members
Interaction with the farmers - individual	To understand the dairying process in the village; problems if any, possible solutions, etc.	Individual farmers	Semi structured Interview schedule	Identified farmers
Interaction with a group of farmers	To have in-depth understanding of the dairy processes in the village	Group of farmers	FGD - Checklist Timeline, Process Mapping, Problem analysis, Cob web analysis, Cause -effect diagram	Identified farmers
Analyse the dairy processes - milch animal management practices, feed & fodder management practices, quality systems, market linkages; services availed from the DAH	To understand the dairying process and the market		Observation Checklist for interaction with various stakeholders	Entire village
Marketing process	To understand the dairy market system in the village	Farmers, Agents, Vendors, Customers, Department personnel, Union/ cooperative members	Observation FGD Semi structured interviews	Farmers, agents, vendors, milk booth persons, department representatives, any other



Process	Purpose of the process	Source of information	Tools to be used	Participants
Credit linkages	To understand the credit availability and access	Farmers, Agents, Vendors, Customers, Department personnel, Union/ cooperative members, Banks	FGD, Interview Schedule, Cob web Analysis	Farmers, Agents, Vendors, Milk booth persons, Department representatives, Bank rep.
Data analysis at every process level	To analyse the findings		Quanti. & Quali. Tools.	CMS & other Partners
Collation of data	To consolidate the filed situation	Findings of the file level process	Quanti. & Quali. Tools.	CMS
Identification of emerging actions	To share the information with the villagers and reflect and identify actions	Data generated using different tools	From Process No 1 to 8 issues, actions are listed	Villagers
Prioritisation by the farmers	To Prioritise actions for intervention	Data generated using different tools	Application of Prioritisation criteria	Villagers
Action Plan Preparation	To prepare action plan for the spontaneous actions	Prioritised actions	Action Plan Proformae	Villagers
Implementation by the community	To implement the proposed actions	Community	Implementation strategies	Villagers
Facilitation of field actions by NGO	To provide handholding and facilitation support at every level	NGO	Facilitation techniques	NGO with inputs from RRG

different channels, net earnings for producers etc. Such analysis would lead to a better understanding of the sector and also form a strong base for advocacy efforts for a project scale-up.

The quantitative information was gathered through interview schedules that were designed during November 05 and applied to the field during December 05. Dr. Steve Stall of ILRI visited the field for two days during which the interview schedules were tested and finalised and this process went off smoothly as, by then, the teams had gained experience and built a rapport with the community during their earlier fieldwork. An understanding of the operation of the traditional sector in the villages was evolving and the insights provided pointers on developing the interview schedules. As in the case of the earlier pre-testing, the presence of senior persons from the RRG facilitated quick feedbacks and actions.

### 3.6 Building and orienting the study team

For the action research, it was necessary to form a multi-disciplinary, multi-skilled team. The composition of the teams and the skills available were carefully calibrated to cover the range and diversity of the processes that needed to be implemented. As the tools and methodologies were being finalised, recruitment of the

team also took place. The structure of the field team for the village and market study is indicated in **Fig. 5**. The RRG members and the consultants from CMS provided support to these teams.

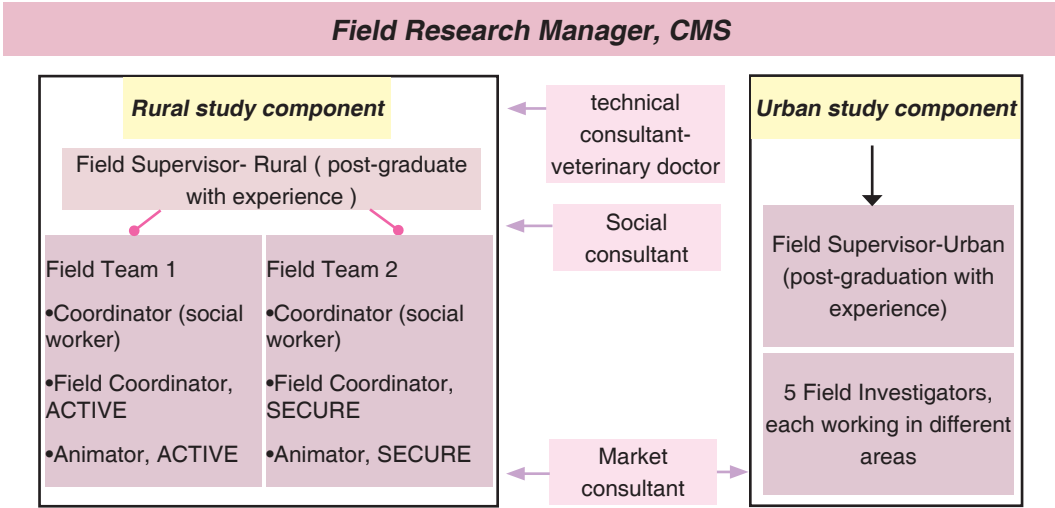
**A field team** of three persons – a social worker, a field coordinator and an animator - from the NGOs were identified to work in each block. Field teams reported to a field coordinator and were supported by a technical and social consultant.

*A technical consultant*, who was a veterinary Doctor, helped in identifying the technical problems and gave suggestions. He also participated in the entire study and was actively involved in collecting information and in the facilitation of actions.

*A social consultant*, provided support in employing the PRA tools and facilitating the processes in the village, including an identification of issues and the spontaneous action initiation and capacity building of NGOs on social action. The social consultant provided support during the first few months of the study. Initially her role was intense, visiting the field regularly and providing handholding support to the field team. Once the field staff was equipped to carry on the research processes and action facilitation by themselves, this role gradually declined.

**The market team** was initially involved in the mapping of milk channels and later expanded to the vendor and consumer studies. This team facilitated the actions

*Fig 5: Field Study Team*



related to the markets. The market consultant was inducted into the team during the channel mapping process. While the market team was mapping the channels at Vijayawada city, the consultant visited the villages to understand the flow of milk from its source and the operation of the milk market within the villages.

### Orientation to Study Teams

The action research was **launched on August 21, 2005** with an orientation and training to the field teams. The orientation was conducted over two days by CMS, which covered:

- Explaining the concept of action research.
- Overview of the study – aims, objectives, methodology to be applied.
- Perusal of the proposal and understanding the scope of the study and roles.
- Finalisation of the draft tools.
- Training on the tools.
- Finalisation of the composition of the teams and the names of the villages for each team..
- Understanding the roles and responsibilities of the teams.

The Director, a senior consultant, and the Project Coordinator from CMS and the Social Consultant and a representative of



*A review following pre-testing of tools*

the RRG participated in the orientation. The team was apprised of the processes that need to be followed, the outputs expected from each tool and the documentation methodology. The participants were divided into four teams of three persons each and each team was asked to read and understand a specific tool, discuss the purpose of the tool, what kind of information it would provide, and how it should be administered. The groups then made presentations to each other. This process gave the team a detailed understanding of the tool and its use.

Following the orientation, the teams went to the field for pre-testing the tools and then piloting the action research.

### Field Experience

In Kondavanmala habitation, when we started the social mapping, one of the villagers started telling the others that we were getting NRI funds and the villagers would get no benefit of these funds and should not cooperate. We assured the villagers that this was not the case and once again explained why we were there. We also spent time explaining the study to the individual and gave him information about the organizations involved. We were able to convince him and he allowed us to carry on with the exercises. I realised then how important it was to get the confidence of the entire community since a “single seed of doubt” can derail the entire process.

Sri Krishnan – Field Supervisor

### 3.7 Pre-Testing of Tools

Pre-testing of tools for their appropriateness took place twice during the study. The first round of pre-testing using the PRA tools and the FGD was carried out in August 2005, immediately after the training, which had two main objectives:

1. To test the tools and ensure that they are able to capture the correct information.
2. To provide the field team a practice in implementing the tools since some of the field staff had no previous experience in using PRA tools and techniques and the pre-testing gave them the opportunity to observe the tools being administered in the field and thereafter administer these by themselves.

This exercise was first carried out over eight days in Dhammapeta Mandal, Peddagollaguden village. This village has three habitations, of which two were chosen for pre-testing. The team tested one tool after the other, with groups. At the end of the 8th day, every member of the field team had the opportunity to try out all of the tools.

The second round of pre-testing was conducted after some quantitative tools were introduced into the study.

### 3.8 Pilot fieldwork

#### Village level pilot

Once the tools were tested and the field training completed, the group broke up into two teams and the pilot fieldwork commenced in the two selected mandals – Konejerla and Dhammapeta.

During the pilot fieldwork, Ms. Rebecca of NRMPA, a member of the RRG, visited the field to provide support and take stock of the progress. All of the suggested PRA tools were being administered. After the pilot study, the teams gathered at Khammam to make presentations to each other on the administered tools. The team

#### Box 10: Phases in Field Work

- Understanding the situation.
- Facilitating actions.
- Assessing and planning.

was positive about their experience and learnings. They also presented some of the problems they faced in implementing the tools.

Ms. Rebecca suggested changes in the number of tools being used. For example, since the social mapping captured information on livelihoods, there was no need to carry out a livelihood mapping. The seasonal calendar provided information that was similar to all of the villages in the area and this information was also available through informal discussions.

Finally, transect walk, social mapping, timeline, vendor and producer FGD were finalised for collecting the information.

Sampling for the producer and vendor interview, was as follows:

The pilot fieldwork set the stage for the processes followed during the entire course of the field level study.

Producers	Vendors
The sample size for producer interviews was 20% of all producers in the village or a minimum of 30 numbers. The sample was based on: Size of the operation, i.e. those having 1-2 buffaloes, 3-5 buffaloes and more than 5 buffaloes. Castes of the village.	The sample size for vendor interviews was 30% of the vendors in ‘vendor only’ villages and 100% in villages where all three operators were present.

The phases in Field Work (**Box 10**) were not distinct in nature and often ran concurrent to each other. Information and analysis were constantly being fed between one and the other phase.

The **field** teams, while entering the villages, established a rapport with the community. PRA tools gave the teams an idea of the village environment and the daily operation of the dairy sector. The people of the village were informed of the time and place for the Social mapping exercise. Participation in the exercise very often started with 20-30 people and during the course of the exercise many left and others joined. At any time there was the presence of 8-10 people. Some of the problems faced by the study teams in the villages are indicated in the **Box 11**.

The team was careful to assess the social dynamics and ensure representation of different groups. For instance, in Chinagollagudem village, the Scheduled Castes and the Backward Class communities lived in close proximity to each other, but the habitation of the Scheduled Tribes was further away. Therefore, separate exercises were conducted for them to ensure that their issues and opinions were recognised and addressed. Social



#### **Box 11. Problems faced by the Study Teams in administering the tools**

Though comprehensive in nature, the PRA process required that groups of people from various segments of the rural community participated in the implementation. It being the peak agricultural season, it was not easy to gather participants from across the community. On account of the time taken to administer some of the tools, the participants would lose interest or would not be able to stay through the length of the entire exercise. Some of the tools were also capturing repetitive data.

mapping gave insight into the village geography and socio-economic profile.

The social mapping provided the route for the transect walk. Transect walks were conducted around the community in order to observe the people, surroundings and resources. The team observed and documented different aspects related to dairying such as animal management practices, feeding practices, and marketing processes. They also observed coping strategies of producers and vendors. These observations during the social mapping and transect walks were further discussed in focus group discussions (FGD).

FGDs with the producers would last for one to one and a half hours. Discussions used to be facilitated around problems of the producers and get the participants to suggest solutions.

The participation of women in FGDs was limited as group discussions used to be held in public places where the women found it uncomfortable to participate. The timing for those discussions was also not convenient for women. Therefore, informal discussions and individual interviews were organised for the women.

Administering the *interview schedules* took about an hour for each producer and vendor. The interviewer had to reach the field early in the morning to meet with the producers and the vendors.

Interviews with vendors were conducted mostly while walking along with the

concerned vendor, as he went house to house collecting milk. It was not possible to sit down at a spot and take 45 minutes to one hour of their time since a delay in transporting milk could lead to its curdling. Going along with the vendor during their pre-dawn collection rounds gave the team an opportunity to observe the process of milk collection, the producer-vendor relationship and the extra services that the vendors provide to the producers. The team also observed the vendors mixing water to the milk that they collected.

During informal discussions, administration of interview schedules and the focus group discussions, the community identified a number of issues and problems related to dairying. The discussions were facilitated towards prioritising issues and exploring potential solutions. The team limited its role to facilitation rather than decision making or influencing the decisions.

The process of developing actions and some of the actions developed are detailed in the section on implementing actions.



*The action research sought to understand the dynamics, the players and the issues of the traditional sector*

#### **Market level pilot**

Once the processes of the village level field study settled, the study team focused their attention on the market. Since milk handling, transportation and processing are critical intermediary stages that impact production and consumption, it was necessary to carry out a detailed study of the market.

The market study was piloted towards mid-October. Vijayawada, located about 130 kms from Khammam town- a big city where the market was well established; the Khammam town- the district headquarters and a mid-sized milk market; Satupalli- a small town close to the sampled villages and the market in the sampled villages were selected for the study.



*For effective diffusion of innovations – an interactive session with a Vendor Association*

The methodology was to map the milk channels, to do a detailed study of the movement of milk from the producer to the consumer. Accordingly, the team first studied the milk routes to the city and the transit points where the milk changed hands.

The market mapping was initiated through key informant interviews. Key informants (KI) are defined as persons who are likely to have knowledge about vendor movements, such as bus drivers, coolies at stations, tea shop owners, etc. The team would ask KIs where and when they could get dubba milk, or milk from the milk-walla. Usually one KI would be able to provide 6-9 locations. KIs were also asked for the locations where the milk changed hands, the size of the transit points and names of other potential KIs. As more and more KIs were met, repetitive responses emerged, till all of the possible locations were covered.

Based on the information, the transit points were divided into small, medium and large.

The team visited the milk routes and asked the KIs about where the milk comes from, how many people come through that route, the mode of transport used and the quantum of milk carried. This information was documented on a format designed for the purpose.

The data was analysed to identify the major and minor milk routes, transit points and milk processing units. These points were located on a map of Vijaywada (fig.6). Once all the transit points were mapped, the team visited each point and interviewed the vendors.

The study covered 75 market intermediaries including 65 vendors. The selection criterion was based on the size of their operation – carrying <40, 40-80, 80+ litres. Profile included whether they were only a vendor or a producer-cum-vendor. The vendors became KI for information on milk processing and cream separation units. The vendor study was undertaken at Vijaywada and Khammam markets. At the same time, the market study was also underway in the sample villages. Its pur-

#### **Talking of Assets**

“No matter how much rapport is built, asking a question related to assets is very difficult.

Respondents hesitate to tell us about all their assets. We then start talking about other issues. In time they do become comfortable and tell us all we need to know”.

Sri Krishnan – Field Supervisor.

pose was to study the flow of milk from the source and associated issues like quantity, quality, use, consumer satisfaction, etc. Mapping in Vijaywada took a team of three people three days to complete in October 2005.

The Consumers of milk are of two-types: Institutional – including teashops, restaurants, hotels, hostels, cream separation units, ghee making units, etc.; and Individual – consumption at the household level.

Identification of the milk processing units was done at the transit points. The team

### Unusual hurdles

“It was difficult for us to locate the centre of the ward. We used the maps to help us. Sometimes we also first took a walk across the ward and then assessed the central point. We were able to locate the ward boundaries through election stickers and with the help of municipal sweepers, political party officials and others who helped out in the election process and knew the boundaries. In the business areas, it was difficult to find the 10th house, in some places the ward ended and we found hardly any respondent. Consumers were curious of what we were doing and many would ask us why we were asking them these questions and what we would do with the responses. We would then explain the research to them.”

Nutan – Field team – market

visited all the milk processing units and conducted interviews with the heads of those units (who are not necessarily owners). Information sought included source of purchase, quantity of purchase, quality parameters, payment modes, use of milk, purchase of milk products, etc. The processing units also provided milk samples for quality testing.

The consumer is at the end of the milk chain and all processes that precede, affect the consumer – the quality of milk given, its price, its use and satisfaction levels. The consumer study was taken up

after the 2nd RRG and was conducted in Vijaywada, Khammam and Satupalli towns. In the consumer study, an interview schedule was administered to 300 consumers. The team collected a map of the city/towns with the wards marked out. The team would go to the centre of the town and from there go to every 10<sup>th</sup> house. It would keep moving around the ward in circular motion, covering every 10<sup>th</sup> house, till they reached the end of the ward.

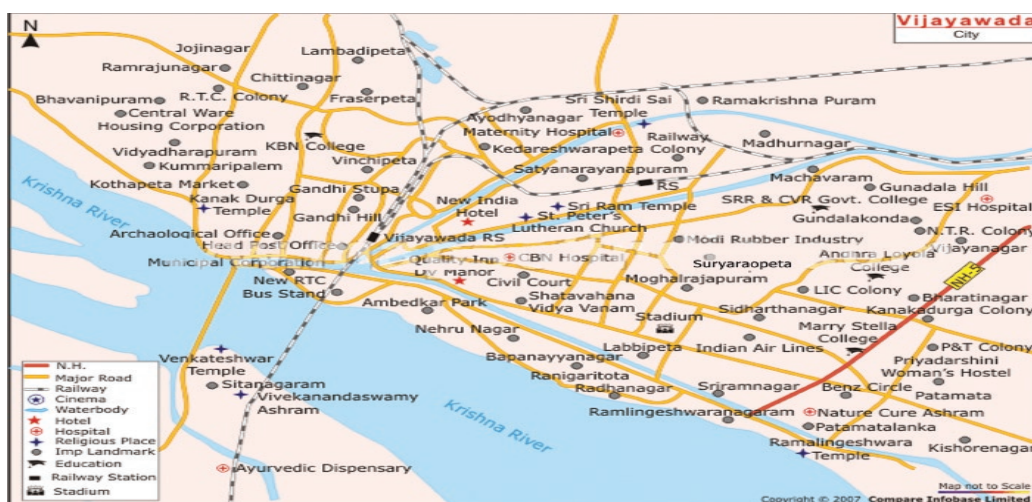
The tools and checklists for the vendors and the consumer study were modified based on the experiences in the field. As the team met and interacted with the respondents, many new issues were raised, which were then incorporated in the tools for subsequent interviews.

Studies have a pilot in order to get an indication of the suitability of the process. In the case of the action research, the pilot provided insights that led to a change in the villages selected for the study.

### 3.9 Finalisation of the methodology and sampling

In the original methodology, the study mandals and villages were identified based on the secondary data collected from the government departments on the number of milch animals, milk production, etc. It was assumed that the traditional market operations would be large in villages that

**Fig.6: Milk routes and milk processing units in Vijayawada city**





had a large number of animals and a high milk production. The pilot in the villages proved this assumption to be incorrect, since many milch animal owners did not necessarily engage in dairying as an economic activity. During one of the field visits by the RRG members of CALPI and the NRMPA, it was highlighted that the purpose of CALPI's initiative was to support improvements of the sector and not to facilitate entry of potential producers into the sector. Therefore, the villages where dairy was a major economic activity needed to be selected for the action research.



*The sampling methodology was keenly debated in the RRG meetings*

The market study revealed that a large milk market like Vijaywada was not significantly supplied by villages from Khammam district since the distance was too much to be able to safely transport milk to the city, without any deterioration in quality.

Together, these two findings pointed to the flaw in using secondary data to identify villages for the study of the traditional sector. Instead, the villages where dairy was a major economic activity could be identified through a backward process that first studied the market and linked it to the production and supply routes.

The village level pilot also showed that competition was an important factor defining the operations and needed to be included as a parameter for sampling. Selection of

### Capturing vendor operations

“Vendors came into the city early in the morning, usually between 6-8 a.m. So we had to be at the transit points then. At the transit points, milk might change hands or vendors might stop for rest before moving on to sell their milk. They would also stop at transit points after distribution of milk. This was the time when we would sit with them for detailed interviews. Otherwise they would be in a hurry and not give adequate time or responses. Our experience with the vendors has been quite good. We were careful to explain the purpose of the study to them and win their confidence. We used to stress that we were not linked to the organised sector.

Initially, we took the interview proforma with us and sensed a hesitation in getting their responses. We then memorized the questions and noted the responses in a note book and they seemed to be more comfortable with this practise. We also conducted the interview more as a dialogue rather than an interview. So we would ensure that all the issues were covered, but did not necessarily follow a fixed sequence or shoot direct questions one after the other. This was probably less threatening for them.

While speaking to the vendors, we learnt a lot about their operations that we didn't know at the beginning of the study. So we modified the interview schedule and the checklist accordingly.

Vendors would be hesitant to answer questions related to the quality of milk. But they were open on the question of ‘addition of water’. We found that even consumers were aware of the addition of water.

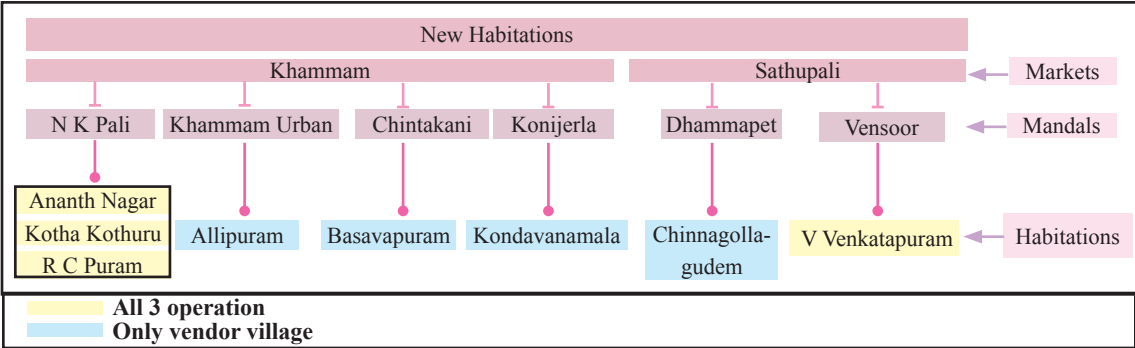
- Nutan, Field team – market

habitations, rather than villages was more relevant, since operations were habitation dependant.

Based on the direction from the RRG, a CMS and ILRI team visited Khammam to reselect the village study sample. Eight habitations were once again selected, of which two remained unchanged from the original sample and six new ones were added to the sample (Fig.7).



Fig.7 Final sample of mandals, villages & habitations



There was a lot of discussion on whether or not to drop villages where the work had commenced given the efforts that had gone into building a rapport and trust and where the expectations of the community had been raised. However the compulsions of the action research and limited time and resources provided little choice but to go ahead with a new group.

In some of the new villages, the NGOs did not have their presence and had to start from scratch to build an identity. The NGO SECURE used this change as an opportunity to enter the new villages to implement its other programmes like, organic farming.

The change was a problem for some of the field staff who had to travel longer distances as the habitations were spread across the district.

All these issues translated into delays that dogged the action research.

Lean season sampling

With the methodology finalised after the pilot, the study team had to plan for the study in the lean season. The research components in the lean season were similar to those of the flush season. Since a comparative profile between the flush and the lean was required, the same tools were applied and the interviews administered to the same sample as selected during the flush season. The flush season study included questions related to the lean season. The lean season study was meant to validate the information and therefore a lower sample size was chosen.

On account of the time and resource constraints, the entire sample of the earlier study could not be covered. The RRG was intimated that 20% of the flush season samples would be selected for the lean season. But, RRG members felt that 20% might not be robust enough and that 50% needed to be covered. Details of the samples across the flush and the lean season are given in the **table 2**.

4. Implementing Actions

4.1 Producer level actions

The process of data collection drew the focus to the problems that the community faced in dairying and potential solutions were generated. The research team provided support for the implementation of these solutions, such as facilitating the development of a community plan (**Box 12**), forging linkages with government departments or facilitating group formation. The number of actions that needed facilitation, the duration and the benefited areas, were decided by the local communities.

The producers felt that issues could be addressed with ease if there was a group and someone to lead and facilitate the solution. This could form a platform to influence dairy activities and the prices. Associations were formed through dialogues and discussions and the team was able to support the registration process of the associations. They supported the formulation of byelaws,

Table 2: Samples across the flush and the lean seasons				
	Flush Season		Lean season	
	Numbers covered	Remarks	Numbers covered	Remarks
<b>RURAL</b>				
Producer	247	Minimum 30 producers in each of the 8 villages	122	About 50% of flush season – Minimum of 15 producers in each of the 8 villages
Vendor	19		19	Same as the flush season sample
Consumer	257	Minimum of 30 producers in each of the 8 villages	122	About 50% of flush season – Minimum of 15 producers in each of the 8 villages
<b>URBAN</b>				
Vendor	49	Khammam = 45, Satupalli = 4	30	Khammam = 27, Satupalli = 3
Institutional consumer	185	Vijaywada = 93, Khammam = 76, Satupalli = 16	0	
Individual consumer	820	Vijaywada = 486, Khammam = 297, Satupalli = 55	182	Vijaywada = 0, Khammam = 152, Satupalli = 30

facilitated linkages with the Registrar of Societies and provided some financial support over and above the community contribution. In one of the habitations, Kondavanmala, the formation of a Producers’ Association led to an immediate hike in the procurement prices.

During discussions, producers realised the benefits of collective action such as access to support services available through the government departments, collective bargaining, support to producers during emergencies, increasing productivity and earnings, etc.

Production and productivity issues were addressed through the delivery of material goods and capacity building (**Box.13**). For instance, the community felt that an animal health camp would enhance the production by raising awareness of producers in preventing common illnesses. The study team facilitated the convergence of the community with the DAH for the health camp.

Box 12: Community action plan

- The problem, its details and effects.
- The suggested actions.
- Estimated costs including those for investment and operation.
- Financial contribution by the community.
- Community level ownership and maintenance (if applicable).
- Technical support, including the institution providing the products or services required, and those providing technical support.
- Next steps and responsibilities towards implementing the actions.

Each government department had its own scheme to support the producers. For instance, the DAH gives breeding bulls to villages in tribal mandals at 100% subsidy and in areas where there is no veterinary hospital within a 6-kilometre radius. DRDA supplies breeding bulls to “Velugu” groups (government supported Self Help groups) at 80% subsidy. The field teams facilitate the linkage between government departments and the village organisations (formal or informal) and

#### Box 13: Targeting actions at production

- Conducting veterinary health camps.
- Conducting awareness camps on feed, fodder, animal management.
- Getting trais from DRDA.
- Distribution of feed and fodder seed.
- Distribution of medicines.
- Formation of producers' committees.
- Formation of vendors' committees.
- Getting breeding bulls.
- Gopal Mitra training

helped the village organisations submit applications and collect community funds wherever required. They also facilitated a dialogue to take the matter forward.

The composition of the field team was instrumental in identifying and applying the solutions. The presence of a veterinary doctor, an ex-employee of AHD, was critical as he was able to identify technical issues and also had contacts in the department that he was able to call on them to support the community. The process of action evolution was 'spontaneous'. This was not a process that involved fixed 'steps.'

The initial actions were implemented as issues were generated and solutions identified. After a couple of months, the study team analysed the situation and presented it at the 3rd RRG meeting. The RRG suggested that the focus of the action should be on:

• **Economies of scale and efficiency of operations:** across the whole spectrum of production-vending-consumption was discussed. While on the one hand, it led to increase in production that would provide incentives for vendors to improve the quality and price, there was also a possibility that vendors would continue at the current scale and an increase in output would result in more vendors entering the market at the sub-optimal level.

• **Quality:** the focus on quality would not be on the composition but more on the bacterial quality. The study can be used to revisit the more than 50 year old standards.

• **Price mechanisms and its linkages:** including seasonal fluctuations, credit, barriers, etc.

• **Operational:** mobilising all the departments and other stakeholders to work together.

## 4.2 Vendor level actions

At the habitation level, there was greater focus on improving the quantity of milk by focusing on the producers. The RRG decided not to draw a boundary around the producers, but to explore the possibilities of addressing the vendors, market and the quality related issues such as organisation of associations, quality improvements and the services that the vendors provide.

### Review, reflection and mid-course correction

"It is the success of the action research process of reflection-action-reflection that we were able to re-focus on 'working with communities who are already in the milk market' and accordingly 'revising the methods to enable sample habitations and markets relevant to the study'. Changes such as 'working backwards from the market', unit of sampling modified to 'habitations' from 'villages', balancing between qualitative and quantitative data etc. were brought in to improve the study processes.

Even though the study process became better, we had our own disappointments – some of the villages where we had initiated the study were dropped from the list; the rapport established and actions initiated with the community could not be taken forward as planned. Even though the RRG suggested that we 'also' work with these villages in parallel, it was practically impossible, as we had limited human resources, time and financial resources for additional villages. We had to tell them that their village was no longer within the study sample though this was not easy."

L Narendra Nath, Field Research Manager

Improvements at the vendor level were a likely result in improving the quality of milk to the consumers and a better price to the producers. Therefore, after January 2006 the focus of the team moved to the vendors. Actions at the producer level were also maintained.

Like the producers, the vendors also saw collectivisation as a means to address issues related to easing operations, enhancing quality and productivity and moving towards quality based pricing. There were some vendors' associations in operation before the action research. However, these operated at places where vendors met, exchanged news and rested. There was no systematic debate on issues and towards the development of solutions.

Four vendors' associations were formed in Khammam town at the transit points. One of these has been registered. Since the associations are new, they are currently looking at the problems that the vendors have, which the association could solve. Over 30 issues were identified by the vendors' association including non-payment by consumers; exploitation of women vendors, compelled to work in hotels and restaurants without any wages in return for keeping the institutions as customers; personal accident insurance; police harassment; and increase of margins inter alia. Some priority actions identified are listed in **Box 14**.

The action research also included a scientific study on the quality which was done by the National Dairy Research Institute (Details of the process are given in section 5). The study found adulteration and other quality issues in the milk. The market team approached the vendor associations and apprised them of the findings. The vendors reacted positively to the information presented and deliberated

#### Box 14: Targeting actions at market

- Ways to reduce the time of vendors for supervision during milking. This would enable them to collect more & to improve the scale.
- Alternatives for the services provided by the vendors.
- Train the vendors at NDRI on technical issues and on entrepreneurship for non-farm enterprises.
- Branding for value addition: Vendors organised and consumers recognised associations providing quality milk, but at a slightly higher price.
- Look for options for developing appropriate technology to work at the market level.

#### A Farmer's view

"I was returning home from the fields on my cycle when I saw a crowd gathered at the centre of the village. I got down and asked a friend what was going on. He told me that a research team were having discussions. I had heard about the research being conducted in the village and joined in. They were discussing how to improve milk production and were sharing problems that we farmers have. I told them that we needed a breeding bull in the village. Artificial insemination was not effective. My friends informed the team that I could take care of a breeding bull since I have one breeding bull that is still young and another, which was sold off. I told them that I was ready to contribute Rs. 1000 for a breeding bull. In December the producers committee applied for a breeding bull."

Meanwhile I also attended the exhibition conducted by the research team and got fodder seeds. I sowed these seeds. I now have a good harvest. I will be able to give nutritious feed to my buffaloes and the bull for the next 3-4 months."

-Rambabu, a progressive farmer in Kondavanmala village

"The study has helped identify issues and plan strategies. Our department can provide support. However, this would be within the guidelines given to us."

- Mr. Ravi Kumar, Jt. Director, Animal Husbandry, Khammam

on the solutions. On learning of training programmes being offered by NDRI on milk handling they enrolled for the training.

### 4.3 Consumer level actions

The milk quality affects the consumers too and the action research envisaged facilitating actions with the consumers on quality improvement. Consumer interviews showed that they knew that the vendors mixed water with milk and that the price was inversely proportional to the quantum of adulteration. However, they were ignorant of the type, degree and the health effects of adulteration using contaminated water and other adulterants. Even when scientific data was shared with a few consumers, there was no reaction towards the suggestion for action since there were no forums or any consumer-based organisation to initiate and lead the actions. In addition, even though the municipal health authorities were





*A veterinary camp in progress*

responsible to regulate the quality of milk and its products, they were either unaware of their roles or unable to enforce the laws. On these accounts, consumer level actions could not be initiated vigorously.

#### 4.4 Concerns expressed

There were serious concerns expressed by both the field team and the RRG members on the sustainability of the producers' associations formed during the course of the research. In most villages, the associations were formed largely in response to an immediate need, rather than as a result of a long-term need. These associations were not registered. The process bypassed the development of rules and regulations of systems and structures related to membership, leadership, functioning, etc. Formation of associations was necessitated partly by the study compulsions to test out actions within the given time frame. A quick formation of associations does not imply that they would also sustain in the

##### Challenges before policy makers

“The utility of the study can be measured against the outcomes that it set out to achieve. What do we want to do with the traditional sector? Should it continue as an unorganised sector? Do we bring organizations into the sector? The private dairies also work as unorganised or semi-organized sector. Or should it flourish, as it exists in a more professional manner. If you want professionalisation, you will need re-organization”

Mr. Neerab Kumar Prasad,  
Dairy Development Commissioner  
Govt of Andhra Pradesh

long-term, but begs towards caution that efforts to ensure sustainability and utility would eventually need to be developed.

Another concern of the RRG in focusing on the vendors was, whether the improvements in vendor operations and profitability would be translated towards benefits to the producers and consumers. They wondered whether the AR would be addressing the livelihoods of a relatively richer group at the cost of a poorer group.

Since many vendors were producers themselves, there was a high possibility that a part of the benefits would be passed on. However in the larger scheme of things, if producers' associations also functioned effectively, the chances of exploitation would be reduced. Since actions at the vendor's level were mostly facilitated towards the second half of the AR – after the preliminary data and an overview of the traditional market were available, the interplay of these dynamics and its outcome could not be observed during the course of the research.

##### Box 15: Objectives of Milk Quality Testing

- To assess the quality of milk right from production to the stage where it reaches the consumer.
- To test milk quality, both chemical and microbiological, from vendors at different stages of milk marketing

## 5. Milk Quality Testing

The action research design, in addition to exploring the social and operational details of the traditional milk market, also studied the quality of milk at the producer, vendor and consumer levels. An indication of this quality was required to understand the type and the degree of adulteration and when and how this adulteration took place (**Box 15**). A scientific study on these was required which was undertaken by the National Dairy Research Institute (NDRI).

Three rounds of milk sample collection and testing were undertaken – Pilot testing, testing for the flush season and a testing for the lean season.

During the pilot testing, the NDRI team of five people went to the field and collected milk from the Khammam milk shed area and also from the nearest large milk market, Vijayawada city. Milk samples were collected randomly from the producers at the milking site and also from vendors at the selling points. The samples, whenever necessary, were preserved with the use of *formalin* as recommended, for a detailed analysis at the Institute. The samples were analysed for fat, solids non-fat, total solids

Box 16: Guidelines for sample collection

- The sample containers need to be sterilised.
- For the producers' sample, the milk is drawn directly into the sampling bottles from the animal.
- Full milk must be drawn and not the milk towards the beginning or the end of the milking.
- From vendors and consumers, the samples need to be thoroughly mixed.
- From consumers, the sample needs to be drawn before boiling or any other processing.
- The samples need to be immediately dispatched for preservation. Beyond a period of 4.5 to 5 hours, spoilage starts to sets in.

and common additives like starch, sugar, urea etc. as prescribed under the standard analytical procedures.

During the pilot phase, 70 samples were collected, 24 from Kondavanamala and Seetarampura villages, 12 from Khammam town, 20 from Peddagollaguden and

Satupalli, and 14 from Vijayawada. The research team from CMS, along with the NDRI team, collected the samples from the participants for testing.

During the 2nd RRG, members felt that the samples should not to be collected randomly, but from a representative of the population covered under the study-based on castes, price, category (small, medium, large operations) and the type of channel (traditional, private, cooperative). They also suggested that all the lean season samples should be collected from the same source as the flush season to enable a fair comparison. Prices should be noted so that a correlation between the price and quality could be drawn. Also, the microbiological quality should be ascertained directly or indirectly at every level.

During individual interviews, producers, vendors and consumers were asked for their consent for providing samples of milk for testing.

The samples for the lean season were collected from the same source as the samples for the flush season, except for two vendors, who could not be located. In addition, the team collected a few more samples from some of the places. Details are furnished in **Table 3**. The sample collection process was very important and therefore, the team strictly

Table 3: Samples for Quality Test

Sl.No.	Place	Flush season	Lean season	Type of coverage
1	Khammam	20	28	Households, private dairy, institutional consumers and vendors
2	Satupalli	14	14	Households, institutional consumers and vendors
3	Ananthnagar	23	25	Producers pouring to vendors, Producers pouring to cooperative, vendors, consumers, private dairy agent, Cooperative Societies
4	Allipuram	18	19	Milk producers, milk consumers, vendors
	Total	75	86	

followed the prescribed guidelines for the purpose (Box 16).

Standard international procedures were adopted by NDRI for testing the milk. Chemical and microbiological testing was undertaken. During testing in the flush season, the milk samples collected were preserved and sent to NDRI’s campus at Bangalore for testing. For the lean season testing, the team carried the required equipments to Khammam and set up a laboratory at the CMS office. Based on the quality tests, an overview of the milk quality drawn up is presented in table 4.

## 6. The Research Reference Group

CALPI is guided by a Steering Committee at the national level with representation from amongst its partners and stakeholders in the sector. The committee guides and advises CALPI on conceptual and operational aspects and approves and steers its projects. The Steering Committee was instrumental in suggesting an action research to understand the traditional milk sector.

Table.4 : Findings

Flush season	Lean season
<p>There was a wide range of adulteration:</p> <ul style="list-style-type: none"><li>• In Khammam town, none of the samples collected from vendors confirmed to legal standards.</li><li>• In Allipuram, most of the milk consumers received a poor quality of milk.</li><li>• In Ananthanagar, the samples received by the vendors were generally of good quality. Private and co-operative dairies received mostly acceptable quality milk. In general, adulteration was comparatively less in this area.</li><li>• Adulteration was rampant in Satupalli area. None of the samples collected from vendors and institutional customers confirmed to the standards.</li><li>• Thickening agents like starch and sugar were not detected in any of the samples tested.</li><li>• The microbiological quality of the samples analysed indicated that the quality was poor.</li><li>• Low priced milk sold to consumers always contained water and a moderate correlation between price and quality could be established.</li><li>• The quality of samples from different vendors and places was observed to vary substantially.</li></ul>	<p>Adulteration of milk with water was rampant in most of the covered areas. The vendors often resorted to addition of neutralisers.</p> <ul style="list-style-type: none"><li>• In Khammam, the milk sold by the Vendors and received at the household was mostly adulterated with water. About 50% of the samples tested contained neutralisers.</li><li>• In Allipuram, samples were found to be adulterated. One third of the samples had neutralisers added.</li><li>• The quality of samples from Ananthanagar was generally good. The microbiological quality was fairly good.</li><li>• In Satupalli, adulteration with water was very common. Adulteration was with water alone; thickening agents like starch, sugar and urea were not detected. The microbial quality was poor. This could be due to the transporting time taken from Satupalli to Khammam. About 50% of the samples tested positive for neutralisers.</li></ul>

At each of its project level, CALPI's approach has always been participative. It creates decision-making bodies and inducts institutions that have a stake in the project in order to solicit different perspectives on issues and build consensus on actions. With this in mind, a Research Reference Group (RRG) was constituted for the action research. The major role of the RRG is shown in **Box 17** The consortium that it had formed during the formative initial discussions (IIM-A, ILRI, PPLPI and NDRI) formed a part of the RRG.

Since the pilot Action Research was carried out in Andhra Pradesh, the Dairy Development Commissioner and the representatives of the Animal Husbandry Department, from Khammam as also from its Head Quarter and the SMILDA were invited to join the RRG. Their involvement in guiding and decision-making and their cooperation in policy formulation and implementation of actions evolved were critical.

**Table 5** shows the specific role of each member of the RRG in the action research.

**Box 17: Role of RRG was evolving and it focussed on:**

1. Steering the process of action research towards its outputs.
2. Providing different perspectives to the research, from experiences elsewhere and within Andhra.
3. Bringing in different sectoral and country experiences.
4. Providing known and tested methodologies and expertise.
5. Collaborating, sharing, networking and advocating findings.
6. Providing a platform for dialogue and uptake of learnings and outcomes of the research into other projects, programmes and policies.
7. Participating in relevant processes in the field

The operational modalities of the RRG were worked out. The Dairy Development Commissioner was the Chairperson of the RRG and the CMS was responsible for convening the meetings. The RRG operated as an open and flexible body and invited persons to the meeting as and

when required. The minimum quorum for the meeting was 50% of the membership. A member holding official position who was transferred or resigned from the post would be replaced by her/his successor to the position. Before every RRG meeting, the members visited the study villages and markets to take stock of the progress on the ground. This provided them a first hand understanding of the field activities, which formed the basis for many discussions in the RRG meetings. Communication among RRG members as far as



*The RRG meetings set high standards for sharing and learning*

possible, was electronic through a list server, set up by CMS. All the members of the RRG were open, supportive and responsive to the needs of the research. This professionalism and openness contributed to the success of the Action Research.

A total of five RRG meetings were convened during the duration of the action research. Each one was convened at an important phase of the study, when key decisions on the way forward had to be taken. RRG provided a direction for the initial sampling and supported the research team in developing the tools, streamlining the use of the tools and in pre-testing them. Based on the pilot findings, the RRG was able to contribute to a mid-term correction of the methodology. In phase III of the Action Research, the RRG members supported the research team in focussing on the producers for initiating actions. Throughout the Action Research process, the RRG steered and directed the way forward.

**Table 5: Role of Specific RRG members**

Partner	Role	Nature of Involvement
CALPI	Study initiator, financial support	<ul style="list-style-type: none"> <li>• Overall coordination</li> <li>• Overall supervision</li> <li>• Creating an enabling environment</li> <li>• Resource inputs</li> <li>• Providing needed flexibility to ensure ‘process approach’</li> <li>• Secretariat to RRG (delegated to CMS)</li> <li>• Sectoral knowledge and experience</li> <li>• Active overseer of CALPI’s domain of livestock products marketing. Link this action research initiative to larger research initiatives as well as to relevant CALPI thrust.</li> </ul>
CMS	Principal-Research Partner	<ul style="list-style-type: none"> <li>• Principal investigator and manager of action research</li> <li>• Complete involvement at all stages</li> <li>• Secretariat to RRG, till completion of research</li> <li>• Active input provider of RRG.</li> <li>• Documentation</li> </ul>
ILRI	Technical support - Livestock	<ul style="list-style-type: none"> <li>• Part of design of the study and providing technical support</li> <li>• Assisting in tool development and templates for analysis</li> <li>• Sharing of best practices and experiences from similar studies in other countries</li> <li>• Areas of concerns, precautionary steps, involvement at strategic check points</li> <li>• Comments on methods and results. Cross sharing of experiences with similar projects (e.g. Assam)</li> <li>• Part of RRG- Dialogue partner (including reflecting on how to link learnings to larger research initiatives)</li> </ul>
PPLPI of FAO	Technical support Livestock	<ul style="list-style-type: none"> <li>• Providing important technical support</li> <li>• Part of RRG - Dialogue partner (including reflecting on how to link learnings to larger research initiatives), involvement at strategic check points</li> <li>• Envisaged as an evolving role</li> <li>• Resource inputs to explore the FAO Platform for sourcing experiences and use UN System outlets for resolving any emerging issues</li> <li>• Policy analysis at a larger level and dissemination</li> <li>• Policy initiatives and guidance</li> </ul>
NGOs/ CBOs	Facilitation at field level	<ul style="list-style-type: none"> <li>• Involvement in field research, identifying problems and solutions</li> <li>• Part of LACG and RRG (as and when required)</li> <li>• Employing role based teams, based on actions emerging</li> <li>• Facilitating actions identified as a part of action research</li> <li>• Monitoring, assessment and documentation</li> </ul>
IIM-A	Research	<ul style="list-style-type: none"> <li>• Providing important technical support particularly on secondary data and analysis, research methodologies, sampling, analysis etc.</li> <li>• Part of RRG-Dialogue partner (including reflecting on how to link learnings to larger research initiatives)</li> <li>• Envisaged as an evolving role</li> </ul>



Partner	Role	Nature of Involvement
NDRI	Quality control	<ul style="list-style-type: none"> <li>• Technical support particularly on quality of milk and milk products</li> <li>• Sharing secondary data</li> <li>• Sharing relevant experiences</li> <li>• Part of RRG- Dialogue partner (including reflecting on how to link learnings to larger research initiatives)</li> </ul>
NRMPA	Local Base support	<ul style="list-style-type: none"> <li>• Part of NGO Assessment</li> <li>• Orientation to NGOs</li> <li>• Participate in key events in the field</li> <li>• Part of Stakeholder Analysis</li> <li>• Coordinating and connecting with various Departments</li> </ul>
DAH	Govt. rep	<ul style="list-style-type: none"> <li>• SMILDA Resource Persons for Capacity Building</li> <li>• Part of Research team</li> <li>• Peer learning (participation in key events)</li> </ul>
Dairy Dev Dept. and ADDCF	Govt. rep	<ul style="list-style-type: none"> <li>• Provide support to the research – information and technical inputs wherever needed</li> <li>• Participation in RRG and other key events</li> <li>• Bring in ideas of Policy changes and Government’s perspectives</li> </ul>

The composition of the RRG was diverse, so was the agenda of its constituents. The RRG witnessed many “creative conflicts”, often leading to introspection and new ways of thinking and new directions to the study. Questions like whether the AR focus should be on livestock production and income or on dairy production and marketing came up at the initial stages of the research. Locating the study in areas having a strong presence of dairy cooperatives promoted by NDDDB was keenly debated. Concerns were expressed on the presence of cooperative and government representatives in the RRG as they may “tilt” the focus of actions towards the organised sector. However through



*There were concerns expressed about the sustainability of producers associations*

debates, the RRG addressed all issues and concerns. The discussion even brought about a change in the mindset of stakeholders of the organised sector that the issue was not of cooperative versus traditional dairying, but of identifying factors that best served the producers and consumers.

Despite a very constructive support being provided by the RRG members, this was not without its limitations. During the 15 months of the field study, the RRG met five times. The first two meetings, the inception workshop and the 1st RRG, were held within four months of the research inception, at the time the action research design was being developed. The three other RRGs were held 4-5 months after the preceding ones. During these months, there was little participation of the RRG members in the actual field operations. The field participation of the RRG members became restricted to visits just before the RRG meetings, which were mainly meant to take stock of the field level progress and also bring up issues requiring special attention in the RRG. Only the support of the RRG member from the AH department stationed in the district (Joint Director of AH) continued intensively.

### Fighting fire

In January 2006, there was a story in the Khammam local newspaper on the traditional milk market, which spoke of adulteration of milk and its implications on health. The vendors' association initially believed that the research team was responsible for providing the details of the story. They were angry and were reluctant to talk to the team. This newspaper item had washed away months of rapport and trust building done by the team.

The Director of SECURE, Mr. Venumadhav accompanied the team to the vendors' association and convinced them that the study team was not responsible for the story. Thereafter, their confidence, trust and dialogue process could be regained.

The partner NGOs were also not formally inducted into the RRG, even though they were invited to participate in the meetings as special invitees. This was a significant oversight, since they had high stakes in the study, were providing critical inputs and were expected to carry forward the initiatives taken during the study.

In general, the membership to the RRG was partly based on posts and partly based on the background and experience of the individuals. There were a few instances when the change of individuals caused some discontinuity during the sessions. Consequential differences on relative priority for quantitative and qualitative data, focus on issues related to enhancement of milk production and marketing etc. resurfaced and had to be addressed.

## 7. Data Management And Documentation

### 7.1 Data management

The study generated lots of data, both quantitative and qualitative. Data management was one of the most difficult processes in the study. Since the data was collected and documented in the field, the number of interview schedules that were to be entered in computers required 10 persons working simultaneously over 15 days. The original plan was to complete the data entry at Khammam where the

field teams were stationed so that queries could be easily addressed. However, it became difficult to get 10 computers on hire, and even more difficult to find 10 data entry operators to enter the data. As a result, the data entry phase, which was planned to begin on 13 December 2005, got extremely delayed. The team soon realised that it would not be possible to do data entry in



*When milk quality testing was introduced in the hamlet for the first time*

Khammam and moved the operations to Hyderabad.

At Hyderabad a training centre with 15 computer systems and operators were hired for the job. Once entry was completed, the field teams congregated at Hyderabad for data cleaning. The report had to be completed by the 3rd RRG meeting on 28 January 2006 and generation of data tables was going on till the last minute.

Given the problems during phase I, the data entry for phase II was planned well. Two of the field staff and one hired data entry operator did the data entry at Khammam, at the field office. The field staff would return from the field and enter the schedules for the day. That worked!!

### 7.2 Documentation

#### Written documentation

All studies generate volumes of experiences and learning. Some are captured in formats developed for the study; others remain with the individuals associated with the studies.

Some useful systems were developed to document information beyond that which got recorded in the interview formats. Since time and skills to write were limited, excel formats were developed to record actions. This ensured that all relevant information was gathered and a common format was available to enable easy collation. The field team was invited to write case studies. They were directed to collect information of a typical producer/vendor's one-day operation. Such information was very useful in understanding the operations. The field team members kept a diary of the day's events. Every evening they would congregate at the office and discuss the day's events, what tools were applied, whom they met, what were the interesting bits of information they got, what were the problems faced, how these were addressed, what support they require, etc. This gave them the opportunity to share their experiences and learn from others. These discussions were documented for future use.

“Dr. Vijay Paul Sharma of IIM raised the issue of milk markets such as Delhi and Punjab, which have a strong informal route, with volumes being high. He felt these are markets that should not be ignored. The discussion that ensued, concluded that the Action Research should be held in one state, one district and few villages initially and then build a methodology that is replicable and can be carried out in any state. The first state chosen should have a reasonable mixture of formal and informal markets and should not have any practical difficulty in implementing the research.

Dr. Sharma also raised the issue of district sampling. He felt a more systematic effort is required to arrive at the selected districts. He felt that the criteria needs to be finalised and then an adequate analysis be carried out. Shiv Kumar of CMS pointed out that the criteria chosen should be those where secondary data was easily available. He also said that the co-operation of the Animal Husbandry department and the Milk Federation is critical to put together this data. The Government representatives agreed to provide the available information.”

- From the proceedings of the inception workshop

## Observation and Visual documentation

Observation was an important component of the action research. Observation of the processes in the milk channel could provide information that no interview or discussion was able to provide. Observations were made on interactions between stakeholders, how the processes were followed – including milking, testing, transportation, adulteration, etc. and hygiene at producer, vendor and consumer levels.

The visual medium is a potent form of documentation since it provides a perspective and understanding that a thousand words may not. In the action research, pictures and videos were used to capture key processes in the milk chain. However, the problem of the audio-visual medium is also one of confidentiality and trust. The producers, vendors and the milk processing unit operators permit photography and video-graphy on the trust that it wouldn't be used against them, or harm their interest in anyway. So it is important that these media are handled with care.

These pictures and movies were shown to an internal RRG audience. However, it was agreed that they would not be displayed to a wider audience without proper editing to protect the identity of the persons or institutions in the media.

## 8. Achievements, Learnings And Challenges

The Action Research process that began in February 2005 concluded in August 2006. During the 1½ years research, every actor and stakeholder found the usefulness of the process, critically viewed each step and contributed to the effectiveness of the process. The AR methodology adopted, reflects the flexible, participatory and transparent process initiated to understand the sector.

This methodology emphasised on a process approach, which was guided by the emerging realities and a quick response to their local needs. The research plan was fitted into an expansive framework with broad budgets and timeline. The methodology was responsive as one can see from the various actions initiated during the research process.



*Vendors proudly exhibit their certificates after training in NDRI*

As AR evolved and the research progressed, RRG provided the required guidance to deal with bottlenecks, questions and uncertainties.

This section brings together achievements, learning and challenges of the action research as expressed by different stakeholders and elaborated in other parts of this document. It looks at the over arching achievements and learning that this action research has generated.

## 8.1 Achievements

As indicated earlier, this action research was the first of its kind in the traditional dairy sector in the country. Over 40 reports have been studied earlier, but evidence based understanding of the operation of the traditional milk sector was not found. The methodology tested through this action research provides the ability to get strong grass-root level evidences through surveys and scientific tests on traditional milk sector and its dynamics. The evidence that it provides are not meant for generalisation, but the process is meant for replication and is one that would bring a rigour into understanding this sector which contributes to over 77% of

the milk marketed in the country. Besides, this action research process provides a clear definition of the traditional sector.

All stakeholders expressed an appreciation of the study concept. The action research was able to provide rich insights into the methodology and the traditional sector, many of which broke assumptions and myths held even by professionals working in the livelihood, livestock and dairy sectors. At the same time, the research was also able to identify issues across

### The power of observation

“I have come often to this village during the research process and I used to hang around the cooperative milk collection point to see how the collection and fat testing were done. The cooperative system was required to follow certain norms, but they necessarily do not happen on the ground.

At this centre, the milk testing is done manually and not by using an electronic Milk-tester. Most of the producers pour the milk and walk off. They do not stay to observe the fat content. The collection agent tests and enters the reading into their passbooks. During the testing process, I observed that the collection agent would slightly tilt the Gerber tube, which has the readings marked away from him. So the fat readings would be slightly lower than actual. The agent knew the variable quality of milk coming from the different households. He would pour the milk in different containers according to this difference. Many local consumers would come to buy milk in very small quantities – like 100 millilitres. The agent would give them milk from the container that has the lower quality milk but charge them the standard rate. I have also seen him give a part of this milk to a private collection agent. So he pays the producers the cooperative dairy rate, but gets a higher rate from the private dairy. These are things that we can learn only through observation. No interview would provide us this information and it may not come up during FGDs also.”

Sri Krishna, Field Supervisor

producers, vendors and consumers, generate potential solutions and test some of those solutions.

It is an important contribution of the action research that efficient convergence amongst the institutions and individuals was built. During the initial study phase, the RRG mechanism facilitated



linkages between the research team and the government agencies for data availability. The convergence in guiding and steering the AR by the RRG, to a large measure, was attributable to the overall coordination by CALPI, the passion it dem-

#### **The enabling environment**

“Let this CALPI-facilitated group (RRG) continue as an informal group beyond the AR, whether there is money or no money – doesn’t matter”

Dr. Satish Kulkarni,  
Head Dairy Tech &  
Principal Scientist, NDRI

onstrated in the RRG meetings and visits and the enabling environment the meetings generated. These are amply reflected by the research partners.

The team expressed the relative ease with which they were able to access the data. This was primarily because, on invitation by the research partners, the state government actively participated in the AR, both by steering through the RRG and implementing the field actions. The study also gave one of the partner NGOs, SECURE, the opportunity to link with the AHD and DRDA. SECURE, also got an entry into a geographical area that it was not covering earlier and used this to get the community involved in bio-technical applications.

The AR provided the facilitative mechanism to bring the government and the community together. Government departments supported the acquisition of resources (like, awareness camps, breeding bulls, trawls, etc.) by the community. The producers needed these resources to improve the productivity of their animals. Most of the time, finance was not an obstacle since government schemes subsidise the products. Yet individually, neither group is able to optimise the linkages between each other. That is because the government does not have budgets for research, exploration and facilitation to understand the community needs and for marketing their services. The community on the other hand, lacks the knowledge or

the awareness of the government schemes and the ability to access them. The market team was able to break the barriers and engage the vendors in a dialogue and form associations.

By involving NDRI and studying the quality of milk, the AR was able to link perceptions with scientific data.

The process of engagement with the vendors gave them a platform to discuss their issues and insights into processes that could be adopted at their level to make their operations more productive and efficient. They indicated that if the milk production and thereby the procurement could be increased, they would increase the price given to the producers. Vendors recognised the need to look at their operations holistically with the producer and the consumer in mind. The platform created enabled changes in the perceptions among some of the stakeholders.

There was also a change in the mind-set of senior personnel in the organised sector. During the 3rd RRG meeting, the Dairy Development Commissioner accepted that vendors “would not go away” and that “we need to work with them to improve the quality of the product for the benefit of both the producers and the consumers”. The key was awareness – of the farmers who should know what they were selling and consumers of what they were buying. This was seen as a critical change in the mindset of the government and a positive outcome of the action research. It was also seen as a stamp of the government to provide the necessary backing for actions to develop the sector. However, the Dairy Development Commissioner who is also the Managing Director of the APDDCF, is responsible for increasing the reach of the cooperatives. Khammam is a high

#### **Role of CALPI**

“What we learnt from CALPI is not the output of the project. It made us think differently with a passion”

N Raghunathan  
Director, CMS



potential district, where the penetration of cooperatives is low. A few months after the 3rd RRG, while soliciting his views on the study, he stated that his aim was to bring the farmers into the cooperative fold. Yet the scale of the marketing operations of cooperatives would become viable only in large cities and towns. Meeting the demand of the smaller centres might not fall within the scheme of the cooperatives.

The involvement of the concerned senior government officials in this research showed signs of visible changes among them. For example the Animal Husbandry Department was very helpful in providing guidance and support for actions. The department provided assistance for improving the sector, rather than thrusting the system of cooperatives.

The research component also broke the myth that vendors were always exploitative and subsisted on the poor and vulnerable milk producers. In effect, in many habitations, the vendors provided a better service to producers. Many vendors also provided high-value service to consumers with milk of good quality.

## 8.2 Learnings

A central advisory group that brings in a combination of expertise contributes to the success of an action research. In this case it was the RRG that brought together a combination of technical, development and management expertise, with policy makers, academicians and practitioners for steering the research. This multidisciplinary group provided the much needed width and depth to the action research. The involvement of such a diverse group gave the study robust inputs, a holistic comprehension and lent credibility to the research that would not have been possible with a homogenous group. The enormous support the AR received from the Government at different levels, from the Dairy Development Commissioner, the Director Animal Husbandry, the Joint Director (AH) at Khammam, Joint Director SMILDA and the APDDCF, has been of immense value.

Critical reflection at strategic check points is essential to make the processes efficient and robust. This reflection, through the RRG mechanism, was the foundation of mid-term methodological corrections and bringing vendor level operations into focus for action implementation.

Inclusion of technical expertise in the field team is critical. Without a veterinary doctor, such an action research would not have been successful, since identification of problems and solutions related to animal care, health and productivity, in most likelihood, would not have happened. Linkages with technical service providers were also made easy. Having worked in the region, the doctor was aware of the local conditions in the dairy and livestock sector, insights that are crucial to facilitate actions at the habitation level.

Partnering with NGOs that had a foothold in the study villages was an added advantage.



*Interface meetings generally lead to resolution of issues*

## 8.3 Challenges

The time taken to administer the tools was the least of the team's concerns. Building rapport with the producers, vendors and consumers and getting them to agree to respond to the questions were greater challenges. The time and efforts required to reach a stage where trust was built with the primary stakeholders and they were willing to work with the team were enormous. This was especially so for vendors, who were suspicious of the teams intentions. Constant engagement was

required to convince them that the study team was not against their interests. Such trust building can take 1-2 months.

The action research developed a methodology for replication and an understanding of the traditional sector. Actions were evolved in the process, however time constraints limited the engagement required to ensure their sustainability. Additionally, since there was no resource commitment beyond the study period, there were limitations to the degree to which actions could be taken. For action research to be successful, the field team needs time to engage the community in dialogue and discussions and gradually move different stakeholders onto a common plane. In this case, bringing vendors and producers together for improving production, quality assurance, better prices and margins was not possible in the time and resource available. Such outcomes were ambitious.

The original study was scheduled to end in January 2006 and cover both flush and lean seasons. Delay in finalising the proposal, the approval process and the sampling methods delayed the commencement of the study. As a result, a decision to extend the field operations to cover the lean season was taken with extended support till July 2006. There was however, a small period of uncertainty, of whether the project would continue beyond the original period. This led to uncertainty amongst the contract staff on how long their contract would continue and the extent to which actions would be pursued. There was also uncertainty among the partner NGOs on the actions initiated in the villages where they were working and the new villages where they had made an entry. The study team could leave if there were no extensions, but the NGOs would not be able to do so.

The action research was conducted in 8 habitations across one district of one state. This is a miniscule sample by any standard. No finding of the research can be generalised to the operation of the traditional sector across a larger

geographical area. As such it cannot be used to advocate policy. The actions too were limited to individual and group levels and actions requiring larger participation of the community beyond the study villages and high investments could not be tested. For instance there are nearly 1700 vendors in Khammam town and the study covered only a handful of them across a few villages. Actions like developing a cold chain, or milk standardisation could not be explored within the associations formed. To influence the market the study would need to cover larger number of vendors/ associations and require a significant investment.



*Cleaning of conventional containers is always cumbersome*

The field teams were a committed lot. Most of the members were engaging in such a study for the first time. Their understanding was limited to their role. They did not have an understanding of the dynamics and outputs that the study was constantly evolving and could not adjust their inputs and processes according to these. During the extended action phase too, regular direction from senior persons with an understanding of the entire project was required.

One source of direction was the RRG, which was supposed to take stock holistically of the study and link up the different components and take key decisions. In the 15 months of the study

the RRG met 5 times, and thereafter during the subsequent action phase once. Initially it met every 1-2 month. Field level inputs in-between the meetings gradually became slow.

The other source of direction was from the senior consultants and directors of CMS and the RRG. Initially, during the study phase, this direction was available in full force, but it gradually reduced in consistency. During the extended action phase, generally the reviews happened long-distance and field visits were fewer and inputs were sought mainly on problem issues. Although this happened as a consequence of the extension in the scope of the project and an extension in the action phase, certain problems could have been avoided and research and action processes could have been improved with greater field level engagement of senior personnel of CMS.

Ensuring the involvement of small farmers, community of the schedule castes and other vulnerable groups and women in the study was a challenge. During the course of the study, it was observed by many stakeholders that women were not adequately involved, that meetings seemed to be located at houses of the rich farmers, near the main roads of the village. The field team expressed difficulty in soliciting representative participation on account of the social dynamics that prevailed in the villages, which an action research could not have addressed. Yet the team did try to solicit broad-based participation wherever it was possible.

Initially there was a need to define the scope and the critical factors to be achieved before the commencement of the study. However, the many times modification of the proposal and the expected outputs, resulted in administrative delays in getting the contract signed and the budget cleared resulted in missing the lean season of 2005. This then had to be moved to the next year. At the process level, delays in data management constrained the time available for analysis and reporting and compelled the field team

to engage in data management. Such delays also resulted in last-minute rushes to complete the presentations and reports.

The sample for the action research was 8 villages and four types of markets. The idea of forming a Local Action Core Group (LACG) was floated during the study design phase. The role of this group would be to closely monitor the field actions, bring in improvements periodically, trouble shoot if needed, be a platform for raising issues for quick solutions, etc. The LACG would operate at the local level for an intervention model in the district to emerge. Efforts towards facilitating formal LACGs at Block or District levels could not be initiated as the study covered a very small area and actions that could operate at a scale could not be formulated.

The focus of facilitating actions with vendors were evolved in January 2006. Following this, engagement with vendors was intensified. Meanwhile certain outputs of the research were available to share with the vendors, on the quality of milk. But, as the objective and scope of the project were limited, there was no certainty on how the overall outputs of the research would affect continuation and follow-up of the market level actions. The team was therefore cautious in facilitating actions at the vendor level. Only a couple of training and awareness building programmes could be facilitated at vendor level.

The research component of the study was also meant to evolve spontaneous actions through discussion on issues and sharing of information generated through the research component. The involvement of the community was facilitated to evolve spontaneous actions. However, the outputs of the study (like the NDRI's findings on milk quality, the comparative benefit to producers of different channels, the unhygienic practices at producer and vendor levels etc.) were slow to reach the producers, vendors and the consumers. In the absence of the information flow, the community's understanding of all the issues remained incomplete. As and when these got conveyed through discussions,

the demand for actions expanded far beyond the scope of the spontaneous actions originally envisaged. This resulted in an extended time frame for the actions, going towards a major share of the second phase of CALPI.

## 9. Some Reflections

### First exposure

“The 8 days during pre-testing was the first time that we were implementing the tools in the field. August was a time of peak agriculture activity. The community was busy in the fields. The tools were quite detailed and comprehensive. Towards the beginning of the exercise 30-40 people would gather around and participate in the exercises. Towards the end of the exercise only 12-15 would remain.

However, the process provided practical experience on the use of the tools. And later the tools were also modified and a fewer number were finalised. That was good. It also gave all of us a common understanding of the tools and the process of implementation (before we split into two teams)”

Anjani, Field team – rural

### Pilot testing

“On each day we were supposed to implement one-two tools and gather in the evenings to discuss our findings and experiences. Sometimes it was difficult to mobilise the community in a short time to complete our study agenda. We needed to have a good rapport and understanding with the community, which was difficult, given the timelines of the study. The deadline for completion of the pilot was only for the team and not for the community.”

L Narendra Nath, Field Research Manager, CMS

### Refreshing the past experience

“Some of us had previous experience in PRA. We did not refer to the notes given to us. Instead we recollected our experiences in administering such tools. The training exercise helped us brush-up our knowledge and provided tips on planning, execution and documentation. I felt that a greater emphasis should have been assigned to documentation. We were told that documentation was very important, but were not given suggestions

on how we could document our field experiences. A separate session on documentation would have been useful” –

Anjani, Field team – rural

### Training

“I had never done PRA before. I did not even know what it was. But the training was very good and I did not have any problem in using the tool in the field”

Satayanarayana, Junior Doctor (Retd.),  
Field team – rural

### From the Field

“In the initial days of the study we learnt a lot about the operations of the traditional milk market. Milk vendors operate at many different scales. Size of the operation is related to the way milk is transported. At one end of the spectrum, there are the small-scale ‘tumbler sales’ and at the other end, large-scale operations where milk is transported by motorbikes. In-between there are vendors who sell in bottles, move on cycles and TVS and also those who carry the milk as head load. To explain these different methods, we took photographs of different kinds of vending methods and printed a poster for display. The visual presentation provided a better understanding of the different vending methods.”

We went early in the morning to the villages to observe the milking and the interactions between producers and vendors. We took our handy-cam with us. We observed that some of the practices were

*Hygiene and sanitation are the most critical areas needing attention.*





not hygienic and caught them on video. At the milk-processing units, we took photographs of the unhygienic conditions. Flies were swarming around the utensils. Milk and milk products were being handled by hand and the unit itself was quite dirty. We collated the photographs and made these into a poster that was subsequently displayed at the venue of the RRG meeting. All the people who saw the video and photographs shuddered at the pictures they saw. We would never have been able to convey these aspects better through reports or written case studies.

#### **Krishnan – the Field Supervisor recounts**

“We were in the village for long hours. Often we would spend the nights in the village so that we could interact with the community in the evenings and early mornings. During this time, we got to know more about the community and they intum about us. We would listen to the problems that they shared with us. They spoke on flow production of milk, problems in accessing credit, animal care, problems with insemination and health services, low milk quality (fat), lack of good feed and fodder, curdling of milk, low price of milk, etc.

During these exchanges we would ask them for possible solutions too. They usually knew what could be done. But often the systems and procedures required to enable a solution were the obstacles. That is where we were able to help by to forging linkages with the appropriate government department and facilitating training, Vet. camps, etc. We were careful to stress that we would be facilitating the process, the community needed to contribute time and efforts and often funds. Some of the solutions were relatively easy with high-benefits. For eg. there were many problems related to animal management that could be addressed through health and animal management awareness camps.

We had some interesting incidents in Kondavanamala, one of the study villages in Konejerla Mandal. When the team came to the village, the vendors thought that we were representatives of the cooperative dairy and they hiked the price at which they were buying milk from the producers by Re. 1 – from Rs. 10 to Rs. 11 per litre. After two months, the animator from SECURE, a resident of the village, took up a job as a collection agent for the cooperative dairy. He would collect milk from the producers and take it to a collection point in the neighbouring village.

The vendors were convinced that it was our doing. During an interview, a vendor had overheard a team member asking the producer why they poured the milk to the vendor at Rs. 11 a litre when they could get Rs. 14 a litre at the cooperative dairy. This was taken as a sign that we were instigating producers against them. They were angry. It took us quite sometime before we could convince the vendors why we were there in the village.

The vendors put up a brave front and told us that they were not bothered about competition since they were sure that a cooperative could not subsist in the village. There have been attempts in the past, with no success. Producers would pour to vendors since they provided better services, vendors gave milk to the producers when their animals became dry, they gave a standard rate irrespective of the season and they also gave advances to producers. Since no cooperative has been able to survive in the village for long, the producers felt that the cooperative was not reliable. In the process of these discussions, we facilitated the formation of a vendors’ association. This was an informal association and was not registered. The vendors were clear that they could give a better price to producers if they could obtain better quality and constant supply. They suggested many aspects of animal management that could help producers improve the quantity and quality of milk, including health management, better feed and fodder.

Simultaneously the study of the producer’s side was also bringing out suggestions for improvement. The producers expressed the need for a travis, superior fodder varieties, training in health management, veterinary health and infertility camps etc. These demands were supported and followed up by the research team with positive results.

In October we conducted a health camp. Doctor Satyanarayana – Junior Doctor Retd. was instrumental in getting the camp organized since he was able to rope in colleagues from the AHD. Infertility, pregnancy diagnosis, general disease treatment and artificial insemination were taken up at the camp. It was during the health camp that the producers expressed the need for a travis. They were asked to contribute some money and apply to DRDA for a travis and a breeding bull. The informal producers’ association that was being evolved agreed to this proposal.

In November, we conducted a feed and fodder exhibition. The AHD provided support for the exhibition and the fodder seeds. A CD on fodder management provided by the AHD was screened at the exhibition. The CD was also provided to the local cable operator to show on the cable channel.”



## 10. Impact Assessment of the Action Research to Improve the Traditional Milk Sector

### 1. Background

At the end of the action research, it was considered important to extract key learning and challenges emerging from the experience so as to improve on these initiatives. The key stakeholders wanted this exercise to be carried out by an independent external expert not involved with the Action Research at any time, so that the assessment remains objective and open from a neutral point of view. To this effect, a rapid impact assessment of the AR was undertaken by Dr. Rajakutty, Professor & Director, Centre for Planning, Monitoring and Evaluation, National Institute of Rural Development during March – April 2008.

The detailed report on the Impact Assessment is available as a part of the Main Report of the Action Research. This is a brief note on the report submitted by Dr. Rajakutty.

### 2. Objectives

The major objectives of the impact assessment were to assess:

- The extent to which the objectives of the AR were achieved.
- The participation of the stakeholders and the extent to which they learnt and initiated actions to strengthen the sector.
- The approach used in the AR to work with stakeholders in the unorganized sector and the flexibility in the design to enable mid-course corrections, synergyzing actions and nurturing partnerships.
- The effectiveness of the RRG mechanism in steering the process.
- The overall contribution of the AR in understanding TMS and initiating actions to strengthen the sector.

For accomplishing these, the consultant reviewed the key documents beginning from the project conceptualization, visited selected habitations and the markets

covered and met the key stakeholders concerned. He also met the local officials of the Govt. AH Dept., the APDDCF, local milk collection societies, the directors, team members and senior representatives of ACTIVE, SECURE, CMS, the Govt. AH and the Dairy Departments, CALPI, Inter-cooperation etc.

### 3. Key Findings

#### 3.1 Project Coverage

The action research was undertaken in Khammam District covering the production areas in eight habitations of six mandals, three markets within the districts (village, a smaller town and a district town) and a metro-level market. Flowing from this, field interventions were taken up by two field NGOs in two divisions – ACTIVE in Satupalli and SECURE in Khammam; CMS provided overall support to the project. The project organized 16 producer groups, 8 informal vendor groups, one vendor association and introduced fat testing facility in 14 locations. The other activities included meetings and interactions, various services and training through linkage with the animal husbandry department and the APDDCF, facilitating fat testing at various levels and provision of dry coolers and packing machines.

#### 3.2 The AR and Phase I activities

These were, meticulously planned and executed. The Phase I of the project has achieved, by and large, the stated objectives and the outcomes are close to the set out mile stones. The role and cooperation of associated departments is very crucial and more intensified efforts with clear identification of roles and expectations would be needed. The Phase II interventions show encouraging signals for improvement in TMS in terms of enhancement in productivity, quality of milk, price etc. More specific documentation is needed to influence and persuade the critical stakeholders to play their role.

### 3.3 Institution building

These efforts have resulted in the formation of groups at village level. These groups are, however, loose and informal, but show potential to grow into an useful forum and instrument to bring changes in TMS. There is a need to work towards making them into more cohesive and active groups. The Vendor centric approach to bring about changes in the TMS, though looks innovative, seems to be on weak ground, but an optimistic effort. The fact that the entry of the organized sector reduces the number of vendors in the area suggests that this may not be a viable central focus for the Phase II field intervention in the long run. However, until the organized sector is able to extend effective milk market access to the low productive areas, it is advisable to pursue the efforts to improve the traditional channels as taken up under the Action Research.

### 3.3 Management of Research

The RRG mechanism that brought together all the key stakeholders brought in rigour and ownership to the entire process. A perusal of the RRG proceedings indicates that the RRG functioned very effectively and performed its role quite meaningfully guiding the AR. The active implementing agencies viz. CMS, NDRI and the two NGO partners SECURE and ACTIVE have shown considerable professionalism and meticulous planning and research rigour.

### 3.4 Key findings

The findings under each area of intervention are detailed in the report. Impacts are emerging in the areas of improved productivity (10-20%), use of better animal management practices, access to veterinary and breeding services including services of Gopal Mitras, reduced incidence of diseases, reduced death of calves, perceptible improvement in awareness on hygiene with a bit improvement in hygienic practices, improved quality of milk across the supply chain and improved milk prices paid to farmers. Better awareness on fat % linked price has enabled producers to assert and extract better prices. The vendor-consumer interface seems to have convinced a few consumers to buy quality milk at higher prices. Convergence with ongoing schemes

and agencies (mainly government) along with social mobilization of stakeholders in the value chain, was seen as an effective strategy in achieving these impacts, but to be pursued further. There are however, areas like adulteration of milk, fodder production, adoption of artificial insemination, strengthening the linkage with the Gopal Mitra programme, availability of good breeding bulls etc. where continued improvements are to be focused further.

## 4. Suggestions

There is a huge potential emerging from this initiative. The key stakeholders from the government side, DAH and VELUGU are willing to actively participate in the initiative, linking with the AHD's Mission—"Pasu Kranti Pathakam". This provides a good opportunity to scale up the initiative at the state level, building on the base created.

There is a need to make available the facilities to a large number of vendors and producers (fat testing, packing machines, dry coolers, etc.). Opportunities for providing these facilities at 'common service centres' or in 'village milk societies' wherever feasible to be explored. All the activities of the project could potentially rally around these centres.

On the livestock services, while the AR may continue to work with vendors as extension agents, appropriate arrangements need to be worked out for effective linkages. Gopal Mitra is a handy support to villagers and this project has really brought out the farmer-Gopal Mitra linkage. This needs to be pursued with more vigour.

Wherever the milk potential improves to support viable centers, the APDDCF should be persuaded to open milk collection centers or install bulk coolers so that more producers have different options in the dairy market at the village level. Some value added services can also be provided by them through their collection centres where the NGO partners can play a facilitating role.

The Phase-II project shows signs of making some dent for the better in the Traditional Milk Sector. This needs to be pursued at least for another 2 years with focus on strengthening the institution building process and forging alliance for convergence and sustainability.

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The International Livestock Research Institute (ILRI) works at the crossroads of livestock and poverty, bringing high-quality science and capacity-building to bear on poverty reduction and sustainable development for poor livestock keepers and their communities. ILRI is a non-profit-making, non-governmental organization with a mandate to conduct research to contribute to livestock development as a pathway out of poverty. It has its headquarters in Nairobi, Kenya and a second principal campus in Addis Ababa, Ethiopia. ILRI works in all developing regions of Africa, Asia, Latin America and the Caribbean, with offices in East and West Africa, South and Southeast Asia, China and Central America. ILRI employs over 700 staff representing some 30 disciplines from about 40 countries.

ILRI works in partnerships and alliances with other organizations, national and international, in livestock research, training and information. It facilitates raising awareness on the importance of research for poverty reduction, develops regional research programmes and projects, facilitates establishment of knowledge sharing arrangements and assists in building capacities for conducting pro-poor livestock research.



## **Action for Collective Tribal Improvement and Vocational Education (ACTIVE)**

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ACTIVE is a non-profit organisation engaged in development of tribal livelihoods in remote, interior and poorly endowed hamlets in the Khammam District of Andhra Pradesh. ACTIVE believes that access to livelihood, socio-political and ecological security is a basic human right and strives to organize marginalized people deprived of these securities so that they are able to access them on their own.

ACTIVE's journey in the development sector began in 1987. Today it is specialized into a socio-technical institute to facilitate economically feasible and environmentally sustainable livelihood and land based programmes through a network of grassroots NGOs and people's institutions. It has core capabilities in the areas of animal husbandry, soil and water conservation, forestry and sustainable agriculture, participatory planning, monitoring and evaluation of interventions for natural resources management, capacity building of NGOs and CBOs and thematic networking. ACTIVE's approach to interventions in the natural resources management involves 'bringing people to the forefront'.



## **National Dairy Research Institute**

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The National Dairy Research Institute (NDRI) is the premier organisation that provides research and human resource development support for Dairy Development in India. Scientific innovation and infusion of science in various sectors of the dairy industry are the hallmarks of the Institute. The Institute works in close liaison with various national and international developmental agencies. It catalyses close interaction among scientists, students, farmers and industry orchestrating harmonious dairy development. The mandates of the Institute include:

- Undertake basic and applied research in Dairy Production, Processing, Economics and Management.
- Develop Dairy Farming Systems and demonstrate models for transfer of technology.
- Organise programmes at under-graduate and post-graduate levels in dairy science and short-term training and vocational courses.
- Collaborate with National and International agencies for Dairy Research and Development.
- Provide consultancy and referral support to Dairy Industry, Dairy Farmers and other Dairy Development Agencies.

## **SECURE**

## **Socio-Economic and Cultural Upliftment in Rural Environment (SECURE)**

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SECURE is an action group started in the year 1991 with a clear mission of facilitating "Integrated tribal and rural development through participatory natural resource management and women empowerment. "Over the past ten years, SECURE has been working for sustainable tribal development through interventions focused on child education & development, women empowerment, promotion of alternate income sources, preventive health education, collective action through SHGs and control and management of natural resources especially forests and tanks. Besides, SECURE is also active in livestock development, integrated pest management, participatory forest management and watershed management.

Its vision is to empower the poor and the marginalised. SECURE is also engaged in community mobilisation related to collective action of Vana Samrakshana Samithis (VSS), tribal land rights and thrift & credit groups into mandal level federations for effective lobbying with government agencies. It is also involved in networking among NGOs of Khammam district for protection of environment, health care and protection of child rights.





Swiss Agency for Development  
and Cooperation SDC

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The Swiss Agency for Development and Cooperation (SDC) is the development arm of the Federal Ministry of Foreign Affairs of the Government of Switzerland engaged in international development cooperation. SDC works in India with a focus on poverty reduction in the semi-arid rural regions of the country.

Starting in 1963 with a technical collaboration in milk production, SDC's partnership with India's development agenda is spread over a diverse set of engagements covering natural resource management, rural finance and livelihoods, decentralisation, empowerment of the discriminated, environment and pollution, humanitarian assistance as well as human and institutional development. SDC India's partners include civil society organizations, Govt. departments, public sector entities, research advocacy groups, professional associations and other development agencies. Its goal is to support people initiated, people owned and people controlled processes that render sustainable and equitable rural development.



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Intercooperation (IC) is a leading Swiss non-profit foundation engaged in development and international cooperation for 25 years. IC is a resource and knowledge organisation with 550 professionals working in 22 countries including Afghanistan, India, Pakistan, Bangladesh and Nepal in South Asia. IC works with a number of agencies like SDC, World Bank, IFAD, GtZ, SECO, EU, ITTO, governments and NGOs.

During its early days, IC focused on providing technical expertise to livestock and dairy programmes of the SDC in many states. Its working domains further expanded to cover institutional development and capacity-building; watershed development and sustainable agriculture; decentralized planning and development and adaptation to climate change. Since 2006, IC operates as a registered entity in India, collaborating with governments and a wide variety of organizations. IC's working domains in India are Livestock, livelihoods and environment; Vulnerability and adaptation to climate change and Local governance & civil society.



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CMS is a consulting research and training organization that has been working in development sector for over a decade. It is part of the Catalyst Group of institutions which include Swasti, a health resource centre and Vrutti, a livelihoods resource centre. CMS strives to enhance the effectiveness and efficiency of organizations working in development through management support services thereby improving the quality of life of disadvantaged groups.

It works with a range of organizations from grassroots community based organizations to NGOs, bi-lateral and multi-lateral donors, government departments and academic and corporate bodies. CMS is known for its expertise in action research, monitoring and evaluation and specific studies. Over the years, the Catalyst group has executed over 400 assignments across India and countries like Sri Lanka, Cambodia, Pakistan and Bangladesh. It has different skills - technical, social and managerial and also experience of working with development focused and business oriented organizations. The group is based at Bangalore in India with branch offices at Delhi, Bhopal, Hyderabad and Madurai.

For more details <http://www.catalysts.org>



## Capitalisation of Livestock Programme Experiences India

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CALPI is a programme of SDC implemented by IC. It's objective is to capitalize on SDC-IC's rich experiences, reputation, credibility and goodwill to significantly inspire changes in the economic, administrative, legal and policy frame conditions in the livestock sector in such a way that the priorities and challenges of the rural livelihood systems are effectively addressed and the rural poor, particularly women benefit from the emerging opportunities. In its first phase from May 2002 to July 2006, CALPI supported 17 projects and ten activities spread over 7 thrust areas through a network of 27 partners. In its second phase (consolidation phase) of two years from August 2006, CALPI supports nine projects.

All the projects supported by CALPI function on a multi-partner, consortia/resource pooling mode following multi-stakeholder participatory approaches and networking, beginning with capacity development of the partners and stakeholders. Most of them focus on niche areas and well identified support gaps of high impact potential on the poor. CALPI always focuses on building synergies and convergence with the Governments playing a facilitating and steering role.



This document is the second in the series on the Action Research (AR) to Improve the Traditional Milk Sector. This briefly presents the process followed in the AR from its conceptualization and evolution till its implementation and impact assessment. The document covers the process for defining the Traditional Milk Sector and the study frame work, the selection of location and samples, seasonal sampling and quality testing procedures, designing, pre-testing and application of tools and identification, implementation and outcomes of actions. It also covers mobilization and nurturing of the multi-stakeholder partnership, its governance, guidance and steering by the RRG, critical reflections at strategic check points, learnings at different levels of the AR and improvements at every learning cycle. The document also presents a critical analysis of the data management and documentation of all the actions.

The experience clearly identifies Action Research as a tool ideally suited for application in a wide spectrum of rural livelihood issues in the low producing backward areas of the country where support from the Governments and other development agencies are difficult to come by. In this respect, the document is well intended and best suited for those institutions and individuals engaged in addressing traditional marketing and rural livelihood issues.



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