

Full Length Research Paper

A model of civil society dialogue on dairy business for implementation of milk standards

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Turkey has been preparing for the implementation of the common agriculture policy (CAP) in the last four decades. Reaching milk standards is one of the important and difficult components of CAP. Food and agricultural organization (FAO) undertook a milk sector study to review the sector and to provide an analysis of the challenges and constraints in the sector, and the possible measures that would need to be undertaken to prepare Turkey for EU membership. This research was conducted in milk sector in Konya province where there were about 26.226 milk producers and annual milk production was 442, 349 680 L in 2010. The study materials were collected from 4 workshops of dairy and dairy products beneficiaries' participations in Konya. The workshop methods were moderation techniques. The overall objective is to create a model of civil society dialogue (CSD) on dairy business that can be a guiding model for the other agricultural sub-sectors. Dairy farms, milk production, processing, packaging, and related management functions were analyzed and the implementation of the CSD model for establishing milk standards were drawn as a result of the study. The CSD model which is described in this study may apply for solving related problems of agricultural sub-sectors in developing countries within sub-sector beneficiaries or stockholders.

Key words: Dairy business, civil society dialogue, milk standards, Konya.

INTRODUCTION

Turkey would benefit from EU pre-accession support to adjust to the *acquis communautaire* and to prepare for the implementation of the common agriculture policy (CAP). Food and agricultural organization (FAO) undertook a milk sector study to review the sector and to provide an analysis of the challenges and constraints in the sector, and the possible measures that would need to be undertaken to prepare Turkey for EU membership. A lack of a professional approach to production, with consequential problems related to appropriate feeding, animal health and low productivity that result in high collection costs and rather low quality milk, degradation of pastures, lack of extension support and an almost total lack of a viable marketing and processing system for the milk were determined as dairy constraints in Turkey. In addition to the support (\$ 46 million per year) provided by Ministry of Agriculture and Rural Affairs (MARA), mostly directed to smallholder dairy farmers, there are a number

of professional organizations that provide support to the sector, such as, assistance for the import of live breeding animals, provision of imported semen for artificial insemination (AI) and for channeling bilateral assistance to the sector.

Focuses on agricultural heritage in Turkey, Konya as the research province, is first ranking city. Also, Konya is within the six most crowded cities of Turkey. The amount of agricultural land is about 2.116.879 ha. Konya's nick name is "Turkey's Agricultural Capital". Although Konya is well known for grain production, the potential of milk production is also very good. Konya produces about 10% of total milk production in Turkey. Hay and forage production, milk machine and barn equipment manufacturing, and milk processing factory in Konya are good sources of dairy business. There are about 26.226 milk producers and annual milk production is 442, 349 680 L in Konya in 2010. Approximately 406, 472 L milk is mainly produced from cattle in Konya. Even though Konya has 1201913 sheep, the production of sheep milk is not an important amount since sheep are mainly produced for meat. There are 31 districts in Konya but, about 70% of milk production in Konya belongs to Eregli, Karatay,

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Meram, Selcuklu, Seydisehir, Ilgin, Karapinar and Sarayonu districts. Milk producer union, animal cooperative union (HayKoop), and cattle breeders union are different organizations of milk producers in 8 towns of Konya. Milk producer organizations are collecting milk from dairy farms in 8 districts by 800 milk tanks. There are 78 milk processing facilities in Konya. Twenty-six of them are located in Eregli district which is approximately 145 km away from Konya centre. About 60% of milk in Konya is processed for white cheese and Konya provides about 10% of Turkey's white cheese supply. Ova Sut, Enka, Akova, Izi, Seker Sut, and Aygin, are main cheese processing companies (MARA, 2010). The dairy situation in Konya has been given particular attention in as much as it could represent a development option for those areas where dairy industry has not reached the EU compatible level. The main characteristic of the dairy in Konya is faced with the problem of securing sufficient quantities of high quality raw milk (FAO, 2007). The situation of dairy in Konya shows that a number of requirements are available but not integrated into agribusiness or agricultural system management, international commerce trade tools to assist dairy farmers in compliance to standards is missing. Agribusiness portal to incorporate management strategies and practices, as well as new technologies in agriculture is missing. For implementation of policy and practices in EU countries, with particular emphasis on sustainable production methods and increasing the efficiency and competitiveness, marketing standards, rural development initiatives, farm and land management, and participation in policy making are required to create civil society dialogue in every sub-agricultural sector. Unfortunately, there is lack of civil society dialogue (CSD) within dairy beneficiaries in Konya. Due to lack of CSD including university, the milk and milk products standards are of low levels in Konya.

The overall objectives of this study are; a) to ensure a better knowledge and understanding of agriculture practices between the EU and Turkey with EU milk and milk products standards; and b) to create a model of civil society dialogue on dairy business that can be a model for other agricultural sub-sectors. Specific objectives of the study are; a) to describe the model of CSD for implementation of dairy milk and milk products standards relating to EU enlargement on agriculture in Konya; b) to promote EU civil society dialogue (CSD) within Konya's dairy beneficiaries as dairy system management.

MATERIALS AND METHODS

The study materials were collected from 4 workshops of dairy and dairy products beneficiaries' participations in Konya. The participants of the workshops were dairy enterprises owners, small farm owners, milk processing factories, farmer organizations, dairy researchers and extension experts, milk machine producers, barn equipment producers, hay and forage producers, Ministry of Agriculture and Rural Affairs (MARA) Konya Branch, Konya

Chambers of Industry, and Mayor of Konya. The first workshop participants were from dairy stockholders in Konya city center, and the others participants from Konya city centre and 31 Konya districts. Moderation techniques were followed in the workshops.

The components of milk standards were described as ISO standards such as ISO 707/IDF, ISO 3890-1/ID for animal health and welfare, feed and food hygiene, finding research into food safety, and labeling for safety. The CSD was chosen for implementing milk standards in the study. It is a multi-disciplinary, participatory methodology for policy and practices applications. It is also a means of integrating farmers in a systematic procedure for identifying and solving problems associated with attempts to achieve diversified and sustainable agricultural development. In this study, multidisciplinary work has been done with farmers to identify problems and constraints, and then create, adapt and test alternative solutions. Cluster analysis was chosen for the assignment of milk and milk products with the respect of milk core. Typological analysis of farm accounting development networks (FADN) was used for determination of 8 districts in Konya as cluster. Algorithms were determinate top-down (divisive) and development ways was assumed compost and biogas production, where final destination is agricultural system management or agribusiness cluster. Agribusiness cluster creates a hierarchy of clusters which represents like forests, instead of seen as trees, separately.

The maximum distance within elements of each cluster (the 8 districts of Konya) = $\max \{d(x, y); x \in A, y \in B\}$. A, B are two clusters. The mean distances within elements of each cluster were observed for A, B, C, D, E, F, G, H, and I as follows (Kraskov et al, 2003):

$$\frac{1}{|A| \cdot |B|} \sum_{x \in A} \sum_{y \in B} d(x, y).$$

Where the sum of all intra-cluster variance, the increase in variance for the cluster being merged, and the probability that candidate clusters spawn from the same distribution function (V-linkage) can be predicted. The stakeholders of milk and milk standards were pointed out in degree from 1 to 4. Milk production, milk processing, and milk and milk marketing were first degree, social capital organizations (international society dialogue) was fourth. The mean of all points were weighted by their degree of belonging to the cluster. Target market was chosen as Konya. Product positioning and new product development were assumed as current structure.

RESULTS AND DISCUSSION

Milk and milk products stakeholders and their needs

Stakeholders involved in production of milk and milk products were described thus:

- a) Dairy enterprises in 8 districts of Konya such as Eregli, Karatay, Meram, Selcuklu, Seydisehir, Ilgin, Karapinar and Sarayonu are main milk producers. There are also dairy enterprises and small milk farms in the remaining 22 districts. In the study, the CSD dairy model is described for implementation of milk and milk standards in 31 districts;
- b) Milk and milk products standards have been certificated by related authorities of Konya province directorate of MARA. Staffs of MARA in Konya province

directorates have been taking responsibility of implementation of milk and milk products standards;

c) The researchers who have been studying on dairy, cattle, hay and forage, agricultural economics, and food science at Selcuk University and International Bahri Dagdas Research Institute are stakeholders too. They have been focused on priority research needs for developing dairy farms, especially for creating milk and milk products standards;

d) Milk producer unions, animal husbandry cooperative (Hay-Koop), cattle breeding union, and hay and forage producers association in Konya have been taking implementation of milk and milk products standards in last decade as farmers organization;

e) Milk machines and barn equipments producing companies as members of Konya chamber of industry have been focused on priority machine and barn equipment technology and related research' needs for developing dairy farms, especially for creating milk and milk products standards;

f) Agricultural consultants of dairy sector have been trying to put milk and milk products standards into implementation in the last five years.

The needs of stakeholders were explained and explored as dairy farms that are registered MARA in Konya needs implementation of milk and milk products standards. MARA branches in Konya need professionals on implementation of milk and milk standards. Milk producer unions, animal husbandry cooperatives (Hay-Koop), and cattle breeding union in Konya are in need of capacity development on milk and milk products standards. In civil society dialogue of milk and milk producers, milk machines and barn equipments producing companies as members of Konya Chamber of Industry need to know technological development of milk machine and barn equipment. The 1766 hay and forage producers in Konya need to know future needs of feed in Konya. Selcuk University and International Bahri Dagdas Research Institute need to know problems and priority of dairy sector in order to conduct research on. Researchers also need to develop agribusiness program which is new and also, where civil society dialogue occurs in agriculture.

A model of civil society dialogue for implementation of dairy milk and milk products standards

Main constraints of the stakeholders were monitored by agribusiness approach due to the lack of civil society dialogue (CSD) in dairy sector. CSD is a tool for developing dairy business since the components are complementary, but there is no fixed CSD model that applies every sub-agricultural sector anywhere. In this case, estimating CSD model is for enabling potential stakeholders of dairy sector to gain a better knowledge and understanding of the EU CAP and practices, and to

be prepared for accession through strengthening the contacts and mutual exchange of experience within all actors of dairy. The problem statements and CSD objectives of sustainable development of dairy were determinate as in Figure 1.

The solutions of dairy problem were matched, to specifically characterize research and innovation in a systematic procedure. The objectives of CSD were descriptive for quality, productivity, and rentability of milk and milk products. The roles of stakeholders were decrypting as shown in Figure 2.

The sustainability of CSD occurred by the respect of stakeholder since it is beneficial for all participants. For example, academicians paid as advisor, agricultural consultants paid by MARA due to privatization of extension education, producers take benefits of prices, and also, security fund for price stability was created in the application. The following drivers also influences CSD sustainability; creating diversity of dairy farms, civil society dialogue with EU members and other states such as USA, Japan, Middle-East countries, and Canada; Controlling and curing extremely economical, social, and environmental damage by civil society dialogue funds; modifying agribusiness management strategy with respect of changes, especially creating social capital institutions in agribusiness such as incubation centers, agro park, spin off, agribusiness development centers, agribusiness development networks, agribusiness education programs, and "agribusiness, environmental, development economics AEDE" program; supporting current knowledge of dairy needs such as qualified human resources, expert advisories, accounting software, financial management software, IT uses for creating public relationship, and research and development of dairy farms.

Quality, productivity, rentability, safety and welfare in dairy sector are important criteria for sustainable agriculture where it is created by application of civil society dialogue. Overall design attributes considered important for CSD in dairy include:

- i. Creating optimum farm size for dairy concern on transforming agriculture into agribusiness;
- ii. Explaining the way of long-term innovative development and its steps;
- iii. Developing capability of receiving communicating information and working collaboratively with others as civil society dialogue;
- iv. Behave in a safe manner, even when partial system failures occur where civil society dialogue called "civil defend experts" step;
- v. Perform a range of useful tasks

CSD gaining attention is a research application and innovation that combines both University and the other stakeholders in barns, fields, and factories. All direct research costs come from research budgeted. The

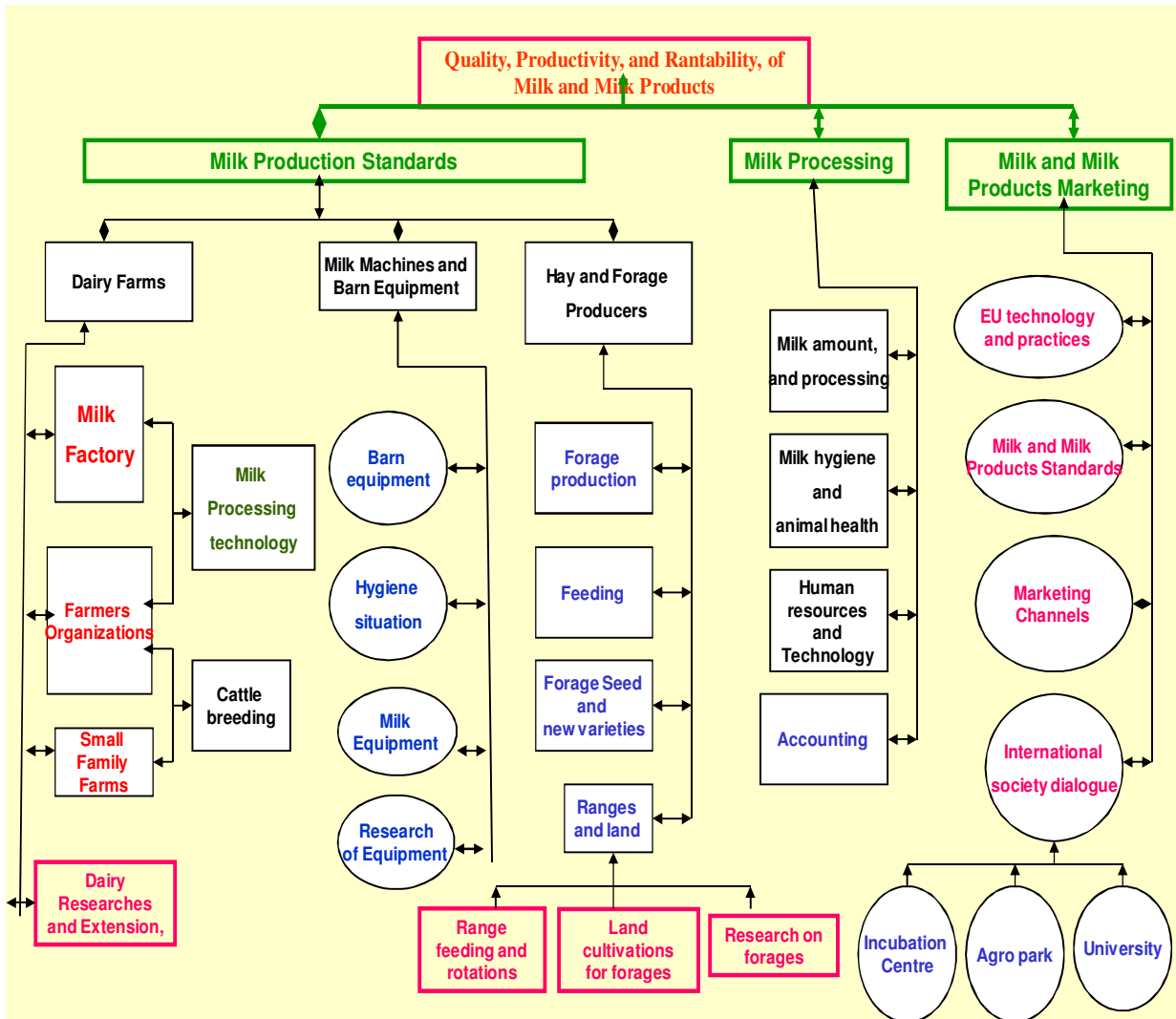


Figure 1. The problem statements and CSD objectives for current structure of dairy in Konya.

stakeholders take advantages of research result. CSD dairy action plan can be explained as follows:

- Trainings for the stakeholders on the way of CSD implementation where final destination occur as system management or agribusiness system management. Target group of the training are members from universities (Agricultural Economics, Animal Husbandry Science, and Veterinary Science), research institute, milk producer organizations, MARA branch in Konya, milk processing facilities, milk machine and barn equipment companies, and hay and forage producers as component of dairy business system management. The training program is life long learning (LLL);
- Study, field visits, and establishment of networks for good practices of milk and milk products standards and application in dairy business;
- The implementation of EU milk and milk products standards. In this case, dairy farms in Konya were

classified into small family farms, medium family farms, large family farms, agriculture enterprises, and family large farms. External drivers, which change current dairy farms, were determined as globalization, warming, technological progress, bio-energy production, environment protection, and EU CAP changes. External drivers of current dairy farms were applied by CSD within dairy stakeholders;

- Workshops for CSD application in dairy business for EU policy and practices applications;
- Publication and printing for awareness on milk and milk product standards and application of CSD on other different sub-sector of agribusiness.

Some specific and quantify results of CSD in dairy implementation may occur as follows:

- The stakeholders of dairy improve their capacity on CAP and implementation;

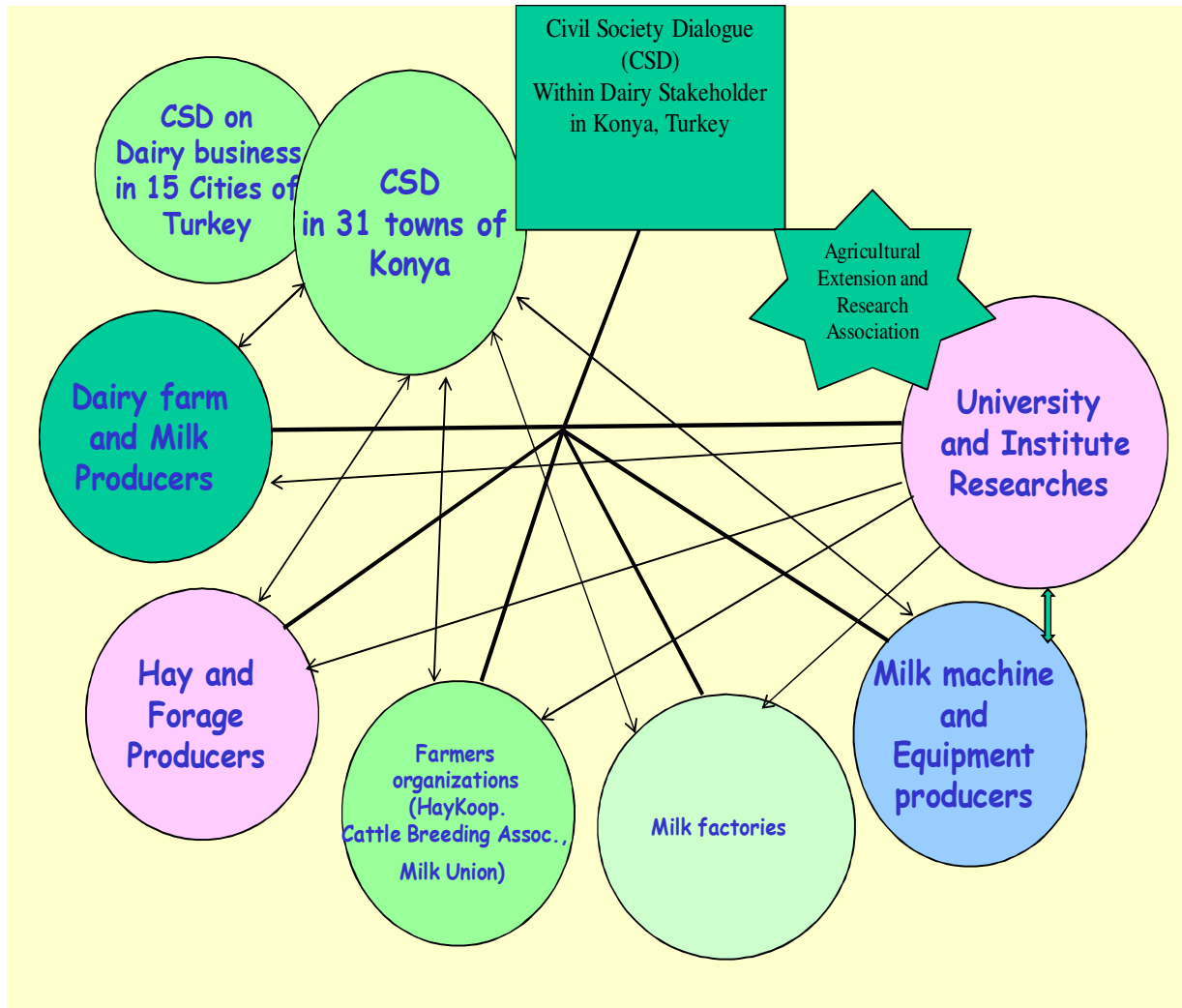


Figure 2. The role of dairy stakeholders in CSD.

ii. Civil society development (CSD) create network for milk producers in Eregli, Karatay, Meram, Selcuklu, Seydisehir, Ilgin, Karapinar and Sarayonu districts in Konya, as well as in rest districts;

iii. Milk and milk standards were implemented in the districts by CSD;

iv. Dairy consultants support to advisory services of milk and milk standards in Konya since they are paid by MARA, due to extension privatization promotion;

v. Milk and milk products standards implementations were certificated by MARA;

vi. The implementation of milk and milk products standards create awareness of CAP and practices in dairy sector in Konya;

vii. The implementation of CSD in dairy was separated in other cities of Turkey too;

viii. The staffs of stakeholders increase their knowledge on CSD application and milk and milk products standards;

ix. The researchers who have been studying on dairy, cattle, hay and forage, agricultural economics, and food science focused on priority research needs for developing dairy farms, especially for creating milk and milk products standards;

x. Farmer organizations (milk producer unions, animal husbandry cooperatives Hay-Koop, cattle breeding union) staff increased their knowledge on application and milk and milk products standards;

xi. Milk machines and barn equipments producing companies focused on priority machine and barn equipment technology for developing dairy farms especially for creating milk and milk products standards;

xii. The staffs of hay and forage producers association increases their knowledge on application and milk and milk products standards;

xiii. The academicians who have been studying Agricultural Policy, EU policy, agricultural economics and livestock economics got opportunities of applied

agribusiness or agricultural system management by CSD.

xix. The applications of CSD for the main sub-agribusiness sector also completed and published;

xx. The world agribusiness network was collaborated with CSD application in dairy;

xxi. Some related universities focused on collaborated agribusiness program at undergraduate and graduate level;

xxii. The standards for dairy farm management within the EU were identified and analyzed;

xxiii. Infrastructure for spatial information in Europe was directive of the EU aiming to assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment;

xxiv. Standards for the certification of agricultural products around the globe were implemented. CSD as Integrated Catchment Management may do all that needs to be done to manage and use the resources in Konya in a way of ecologically sustainable. A policy tool increasingly was used to improve the environmental impacts of dairy farm management in the context of CAP.

xxv. Qualified human sources as dairy experts were increased;

xxvi. Social organization need in dairy sector was established by social capital for logistic leverage, buying, and trusted third party, data management, processing, and helping business development;

xxvii. Dairy system management to communicate the multifunctional dairy farms of tomorrows as being environmentally and socially friendly, energetic, and autonomous, and enhancing the rural economy was set the requirements;

xxviii. Dairy works to society with a complete record for all available standards for the agriculture and the environment was measured;

xxix. CSD for each sub-agribusiness sector was collaborated in national and international level. Agribusiness management, agribusiness marketing, agribusiness finance, agribusiness policy, and agribusiness trade programs were organized for university graduates, as well as for stakeholders. The exchange programs were organized within EU members and also other countries;

xxx. Long-term cooperation and partnerships in agriculture, food safety, veterinary and forage phyto-sanitary as CSD in Konya and on agribusiness may be strengthened in Turkey with CSD in EU countries.

Conclusion

CSD models are the ways of sharing knowledge and best practices on planning and implementation of EU policies where priorities emphasize on sustainable production methods, increasing the efficiency, and competitiveness in dairy. The competitiveness requires civil society dialogues for implementation of the standards and

traceability in milk and milk products chain as self assessment system of dairy.

The outputs of action are a list of external drivers, analysis of external drivers, knowledge management methods, SWOT analysis of drivers and dairy farms, visions and recommendations for knowledge management, analysis of principles for adaptive knowledge management on 18 pilot farms, strategies for adoption of knowledge management on agribusiness in Turkey, vision statements and road-map methodology for adoption of knowledge management on agribusiness.

Further discussed action should be implemented for dairy farms of tomorrow to include: analysis and specification of knowledge based dairy business as civil society dialogue –agribusiness, analysis and specification of system requirements related to decision processes, compliance with new framework, information need of CSD, network solutions for rural area as rural development initiatives and real-time agribusiness management.

Dairy data base may contain databases of technology, environmental impacts, financial issue, market and marketing, rural development module and decision supports system, at the level of Konya, while TR-52 are seen at other cities of Turkey and at other international cities.

Regulatory frameworks include production and processing, definitions, internal and external strategy, on field decisions, online repositories, manual inputs, catalogues, data documentation strategy, sustainable assessment of agricultural system management and information system, specifications, prototype server, partners, testing, and client development to the state-of-the-art.

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