
CAPITALISATION OF EXPERIENCES OF THE LOCAL MARKET DEVELOPMENT PROJECT IN KYRGYZSTAN: 2005-2015



Stefanie Kaegi, March 2016

Acknowledgement

I would like to express my gratitude to the women and men farmers, entrepreneur, former project staff and Helvetas resource persons, the project's partner organisations and representatives of other development projects for their time and openness to meet and exchange their experiences with me.

A special thank goes to Samat Toigonbaev, current LMD project manager for preparing and organising the visit. The time I could spend on reviewing a wide range 10 years of project interventions supported by LMD is comparably very short. If there were any misunderstanding then I would kindly ask you to accept my apologies.

Table of contents, figures, and tables

1. Lessons learned and conclusions	5
2. Introduction to LMD	9
3. Objective of the study	10
4. Methodology.....	10
5. Overview of the project development over time.....	12
5.1. Intervention areas.....	12
5.1.1. Geographical intervention area	12
5.1.2. Market intervention area	13
5.2. Evolution of LMD monitoring approaches.....	17
5.3. Evolution of project staff and changes in intervention approaches.....	18
6. Project contributions to the fruit and vegetable market system	21
6.1. Contributions to the core functions of the market system: supply and demand.....	23
6.1.1. Support to the supply side: activities at farm level	23
6.1.2. Contributions to the demand side: processors and traders	29
6.1.3. Effects: Some data on the development of the Kyrgyz fruit and vegetable market	36
6.2. Contributions to supporting functions	39
6.2.1. Support to agricultural services providers (SP)	39
6.2.2. Support to associations.....	42
6.2.3. Support to agro input supply markets	43
6.2.4. Support to agro finance organisations	45
6.2.5. Support to consultants	45
6.3. Contributions to rules and regulations	46
7. Effects of the interventions at farm level.....	47
8. Overall achievements: LMD's support to the market system change	55
8.1. Market system change: Agricultural producers.....	56
8.2. Market system change: Processors and Traders (P/T)	57
8.3. Market system change: Value Chain Supporters (Service Providers)	58
9. References.....	59

Table of figures, charts and photos

Figure 1: Result chain of LMD project in.....	9
Figure 2: Business development projects in Kyrgyzstan (Annual Report 2014)	10
Figure 4: Map of the seven political regions in Kyrgyzstan. Source: Timothynunan 2015.....	12
Figure 7: Intervention scheme of LMD by the end of phase 2 (own figure)	20
Figure 8: Intervention scheme of LMD by mid-phase 3 (own figure)	20
Figure 9: Stakeholders and institutions of the market system and LMD's support (adapted from Dietz (2015)).....	22
Figure 10: Former and new logo of Taste of the Sun (Annual Report: 2014.	31
Figure 3: Market system development analysis framework (adapted by Stefanie Kaegi; Nippard et al. 2014)	55
Photo 1: Recently established input shop of RAS Batken (Stefanie Kaegi: 2015).....	25
Photo 2: Agricultural input shop at RAS Jalalabad and sold herbicide from Syngenta (Stefanie Kaegi, 2015)	26
Photo 4: Women workers in OSKA processing enterprise in Manas (Stefanie Kaegi: 2015)	29
Photo 5: Manager of OSKA presenting the certificates for his participation at trade exhibitions (Stefanie Kaegi: 2015).....	32
Photo 3: Farmer group in Issyk-kul region (Stefanie Kaegi: 2015)	47
Chart 1: Number of farmers per culture from 2005-2015 (based on information of SPs and annual reports 2005-2015).....	13
Chart 2: Number of processors involved per crop from 2006-2015 (based on information of SPs and annual reports 2005-2015)	14
Chart 3: Development of selected LMD value chains over time (Source: SPs and project reports) ...	16
Chart 4: Number of LMD farmers per culture (based on information from SPs and project reports ...	23
Chart 5: Share of IPM farmers on total LMD farmers 2005-2014 (based on project reports and Dischl (2012)).....	25
Chart 6: Cost of services per farmer (based on Dischl (2012) and project reports 2012-2014	28
Chart 7: Number of processors and traders involved in LMD value chains from 2005-2015 (based on information of processors and annual reports 2006-2015)	33
Chart 8: Number of processors per region in 2003, 2008, and 2012 (based on SENTI 2003, 2008, 2012)	34
Chart 9: Total crop production in Kyrgyzstan from 2010-2013; (based on http://www.agro.kg/ru/agro_prices/5408/).....	36
Chart 10: Export, Imports and Trade Balance of the fruit and vegetable market from 1990-2010 (M-vector: 2013)	36
Chart 11: Trade balance of processed fruits, corn and vegetables in Kyrgyzstan, 2012 (based on M-Vector: 2013).....	36

Chart 12: Income of service providers through the sales of services to private sector (based on Dischl (2012) and project reports 2009-2014)	44
Chart 13: Value of vegetable seeds, imported to Kyrgyzstan, 2010-2012 (USD thousand) (Source: M-Vector: 2013)	44
Chart 14: Number of new farmers and number of total farmers involved in LMD activities. Data bases on project reports 2005-2015.	47
Chart 15: Evaluation of a few statements related to success in agriculture by beneficiary farmers, n=340 (M-Vector: 2015)	48
Chart 16: Evaluation of a few statements related to success in agriculture by farmers from the control group, n=112 (M-Vector: 2015)	49
Chart 17: Application of new technologies by LMD man and women farmers (M-Vector: 2015)	49
Chart 18: Perceived changes in income from farm activities of LMD farmers and non-LMD farmers.	50
Chart 19: Factors that influenced income change of LMD farmers (M-Vector: 2015)	50
Chart 20: Application of improved crop growing agricultural technologies in your work in the past 10 years.....	52
Chart 21: Share of LMD and non LMD farmers that established new market linkages in the last 10 years (M-Vector: 2015).....	53
Chart 22: Share of farmers that took a loan in 2015 (M-Vector: 2015)	54

Abbreviations and names of stakeholders

AFIE	Association of Food Industries Enterprises
AFVPE	Association of Fruit and Vegetable Processing Enterprises
Agrobilim	Service provider
Agroconsulting	Service provider
Agroinform	Service provider
FVE	Fruit and Vegetable Processing Enterprises
LMD	Local Market Development Project
M4P	Making Markets Work for the Poor
Mekhr Shavkat	Service provider
MFI	Micro Finance Institutions
MSD	Market Systems Development
MTR	Mid-Term Review
NGO	Non-Government Organisations
ODA	Overseas Development Assistance
P/T	Processors and Traders
RAS xx	Regional Rural Advisory Service Center of a specific region (xx)
RAS	Rural Advisory Service
SP	Service Providers, here local non-government organisations that provide agricultural services
TAIC	Training, Advisory and Innovation Centre
VC	Value Chain

1. Lessons learned and conclusions

Economic, ecological and social sustainability of services in M4P projects

LMD pursued ambitious social and environmental objectives, while in the same time, it strived to work along the M4P approach that obliged the project to support services and interventions that are required by the mainly private market. The trade-off between catering to public interests and private interests became particularly obvious in two aspects: 1) Training on integrated production methods and 2) the selection of project areas.

With the shift to the M4P approach, it became more and more difficult to justify full IPM training cycles that no private actor was ready to pay. Instead of just quit the support to IPM trainings, LMD decided to use some of its public funds to support these trainings in favour of ecology. This is not aligned with the M4P approach, but is fully realistic looking at the trade-off between public and private interests: LMD did not phase out contributions to public interests only because there was not market for it at the time the intervention took place.

LMD decided differently concerning the selection of the project area. With the shift to the M4P approach, two particularly poor project areas were phased out because providing services in these areas was not considered financially viable. This clearly shows that for catering to some public interests a pure M4P approach might not be sufficient and public funds might be required in the long run. If governments are not ready to provide the required public funds for public interest, projects can either invest into advocacy, cover the costs, or decide to neglect the concerned public interest. This difficult decision requires careful and honest reflection.

Another lesson one can derive from the history of LMD is that in Kyrgyzstan embedded services are one of the major means for SPs to generate an own income besides donor funds. Such embedded services bears an ecological risk because the more inputs an organisation can sell, the higher is the profit. The LMD study shows that donor dependency of service providers to some extent limit these ecological risks: as long as donors are effectively interested in promoting ecologically sound agriculture and ready to support only coherent institutions, providers of embedded services do not dare to promote contradicting technologies (e.g. GMO seeds and organic agriculture; or IPM and excessive use of pesticides).

Platforms for information exchange and networks of service providers are key for the agricultural innovation system, respectively for mutual learning of extension workers. It is a matter of fact that such platform are hardly financed by market actors, except large international private companies are involved. LMD phased out its support to such platforms due to lack of their financial viability. Exactly such platforms, however, are key for the maintenance of the services' quality and thus the financial viability of services.

Capacity development and partnerships

LMD worked along a partnership approach and invested considerable resources into institution building and capacity development of its partners. Looking back, the established and/or strengthened institutions are one of the remarkable impact of LMD. Although today most of these partners are financed mainly by donors and not as once expected by the private sector, their services are available for the rural community as well as for processors and traders. Even more, the capacity development of LMD on IPM led to the situation, that today a significant number of IPM acquainted trainers are able to share their knowledge – a precondition for further trainings on ecologically sustainable farming. The following learning can be derived from LMD's partnership and capacity development approach:

- The small project team was quite an innovation at the time LMD was launched: it obliged the project to externalise activities and thus to invest into capacity development of partners. Such approach seems a precondition for M4P projects that aim at having a facilitation instead of an implementing role. E.g. instead of doing studies itself, LMD

provided numerous mandates to M-Vector, a local consulting agency. With this, LMD built unintentionally local capacities that today effectively contribute to the overall development of the sector.

- LMD's emphasis on strengthening the capacities of the supporting actors can be seen as a key contribution to the market system: today, many supporting actors are mandated by new actors. In particular the project led training laboratories were a success story and led to fast enhancing capacities of the partners. In this regard, one have to keep in mind, that such trainings normally rely on public funds in the long run and one cannot expect that private sector or even the governments invest into such trainings after phasing out of a project.
- The focus on financial sustainability of interventions brought about decreasing investments into institution building and capacity development. These two aspects, however, are the precondition for financially viable services.
- The content of capacity building for agricultural trainers (extensionists) influences what is taught on field level in the long run. Trainings of trainers (ToT) are thus a significant means to influence the content of rural advisory services beyond a project lifespan. Although trainings on ecology in farming alone might not be financed by private actors and thus not take place, the trainers – if acquainted with ecology in farming– will think different about agriculture and share their knowledge during other trainings. In this regard, investments into ToT on sustainable agriculture will have a sustainable impact, although such trainings are not directly requested from private actors.
- The history of LMD shows that the selection of partners (either NGOs, or private sector) is crucial and should be done in a rigorous and careful way. Although capacity development can increase the performance of a partner, it cannot change the DNA (=attitudes, interests, motivation) of an organisation in principle.
- LMD has experienced the challenge of handing over former project activities to partner organisations, e.g. to the newly established association of service providers. Such handing over bears the risk that the partner organisation does not perform as well as formerly the project, which may lead to disappointments. Therefore projects should strive to work already from the beginning through partner organisations or if this is not possible provide close guidance and support during hand over processes.

Supporting market systems: working on both the supply and the demand side of markets

While LMD successfully supported the supply side of the value chains, the project worked in a context with a highly fluctuating market demand. This affected continuity of the promoted value chains and thus effectiveness of the production support. In this regard, supporting the demand side of the products would have been crucial, but remained one of the weaknesses of LMD for several reasons:

- While the project worked with a high number of SP and also triggered competition among them, all support to processing companies was channelled through AFVPE. For different reasons the AFVPE was - and is not - fully recognized by the sector, and thus has limited influence on the demand side. A main reason might be that AFVPE remained a donor oriented association that adapt their services according to donors' instead of processors'/traders' interests.
- The processing companies and traders may favour other ways of getting access to their supply than through SP, e.g. by working with own or private agents or by establishing own farms. These approaches were never explored in LMD.
- SP did not have it in the DNA of their organisations to broker deals with private companies. They had to take on this function because the project demanded it. Once the linkages

were created, the role of SPs became needless and the processors/traders worked again on their own.

- Donor organisations supported LMD stronger for the work with farmers than for the work with processors and traders. The project could not shift funds acquired for production activities to marketing, processing and trading activities. This is a precondition to work on the demand and on the supply side.

That is why, LMD could not enhance the capacity of processors/traders to demand the promoted products in a continuous, which led to a comparably small absorption capacity of the market for the produced crops and limited growth of the value chains.

The study provides several learnings for strengthening the demand side of agricultural products:

- 1) Only if projects/donors ensure that funds are available for supporting both, the demand and the supply side of a value chain, one can effectively engage in value chain development.
- 2) If support is provided via a partner organisation (in the case of LMD, AFVPE) this institution has to be broadly accepted by the sector and should be able to offer useful services. There often exist a trade-off between working through partners and offering - in the short-term more effective - direct project support. Facing this trade-off, project should reflect, whether the management of the partner organisation lacks inherent motivation to offer requested services, or whether the trade-off appears mainly due to a lack of capacities. Only if the latter is the case, investments into capacity development make sense, otherwise, projects should look for other partners and not continue collaboration with weakly performing organisation.
- 3) Lack of trade capital remained one of the main constraint for the growth and sustainability of the demand side. In this regards, projects should consider two aspects:
 - a. Find ways to support access to trade finances is a highly valuable project support. Possible actions include:
 - i. Support finance institutions in developing suitable credit lines
 - ii. Support borrowers with guarantee letters (only in case that with growing experience, such guarantee letters are not necessary anymore)
 - iii. Support advocacy work on national level to enhance the business environment in general.
 - iv. Facilitate exchange among business actors in order to support peer to peer learning.
 - b. Critically assess the business actors' readiness and ability to invest into their businesses at the beginning. There are business actors that don't have an inherent interest to invest and to take risks. They may claim that it is because of lack of trade finances, but the actual reason is another one.

Continuous and stable monitoring

LMD established a comprehensive monitoring system that bases on data collection by partners. The availability of the generated data was highly valuable for project steering, monitoring, and evaluation. The following lessons can be derived from LMD's comprehensive monitoring system:

- LMD closely monitored cost efficiency of diverse training approaches and therefore was able to compare the diverse approaches. This opened the opportunity to select most efficient support approaches, which was valuable for the full project lifespan. Such approach requires comparably high investments at the beginning of a project, but finally leads to more efficient investments.
- With the shift to the M4P approach LMD changed some indicators and result chains. This rendered some of the formerly adequately collected data inapplicable for further use. The

impact on the monitoring system of such shift – although tempting – should thus be carefully considered.

- Tracking of beneficiary data is crucial to measure the overall impact of a project. Due to a lack of identification numbers of each beneficiary and the change of certain indicators such tracking became impossible. Therefore, it makes sense to select at the beginning of a project a small farmer group and a control group that will be tracked during the lifespan of the project, while the majority of the beneficiaries will only be partly monitored.
- LMD presumed that partners have an interest in gathering data in order to better sell their services to business partner. This presumption was not fully realistic and partners collected data mainly because the project demanded and paid for it. In this case, the monitoring system would have been an interesting tool to assess the partners' real business interests and to cross-check, whether the data they collect are really useful for doing businesses.

Continuity versus change

- LMD has experienced a quite fundamental change of the intervention logic from a value chain approach to an M4P approach. This has been an important step to gain experiences in M4P and to build capacities of partners on this systemic approach. The change required from the project team and partners to re-orient themselves in the new logic. Such re-orientation bears the risks to disrupt the project implementation, and may throw back the project's achievement (as partly happened in the case of LMD): Usual interventions - although valuable - might have to give way to new interventions. These new interventions may not be as effective/beneficial as the former one and may lead to disappointments or overestimations. Therefore, a change in the intervention logic – although very tempting from a strategic point of view – bears great challenges and must be considered carefully before hand.
- On the other hand, LMD has also experienced that too much continuity affects the project effectiveness: In example with the introduction of a volume-based payment system, LMD started to emphasise on **written agreements** between processors and suppliers. Given the unfavourable conditions to written agreements (tax law) it would have been relevant to search for and to support alternatives to formal agreements. The openness to introduce alternative agreements might have been more adequate and supportive to all concerned stakeholders. Another example is LMD's understanding that service providers/NGOs should take on the role of brokers between farmers and demand enterprises. Effectively, private companies may have preferred other models, e.g. working with private individual brokering services or establishing their own farms. By sticking to the idea that NGOs offer brokering services, LMD has probably missed a chance for upscaling.

Impact

Despite above-mentioned challenges and lessons learned, LMD had has a considerable impact (see chapter 7) on farm level: the almost 10'000 benefitting farmers changed their production systems, they enhanced their income, and created significantly more business relationships than non-LMD farmers.

Further, LMD successfully supported AFVPE, which today unites a large share of processing companies in the country and successfully acquire donor funds for continued advocacy work. It is yet one of the only association of this kind that successfully and probably continuously provide support to the processing and trading sector.

And last but not least, LMD continued the former HELVETAS/SDC investment to strengthen the countries capacities on integrated production methods and significantly contributed to the knowhow on IPM that is currently available in the country. This knowhow is today requested not necessarily by the private sector but by diverse donor organisations interested to enhance ecology in farming.

2. Introduction to LMD

LMD set up in 2005 with the overall objective “to increase the economic performance of farmers by improving access to inputs, services and markets, which will increase their productivity, production and income” (MTR: 2014)

The project interventions can be summarized as follows:

- to enhance the commercial skills and knowledge of rural farmer groups in order to increase their market-orientation thus contributing to generating income
- to strengthen the product-value chain (producer-processor-trader-consumer) in the Fruit & Vegetable and Dairy sector so that producers gain access to local (and external) markets;
- to facilitate a multi-stakeholder approach in Kyrgyzstan to advance socio-economic development in rural areas. (ProDoc: 2005)

The impact logic that has been continuously developed since 2005 is shown in the figure below in the form of result chains:

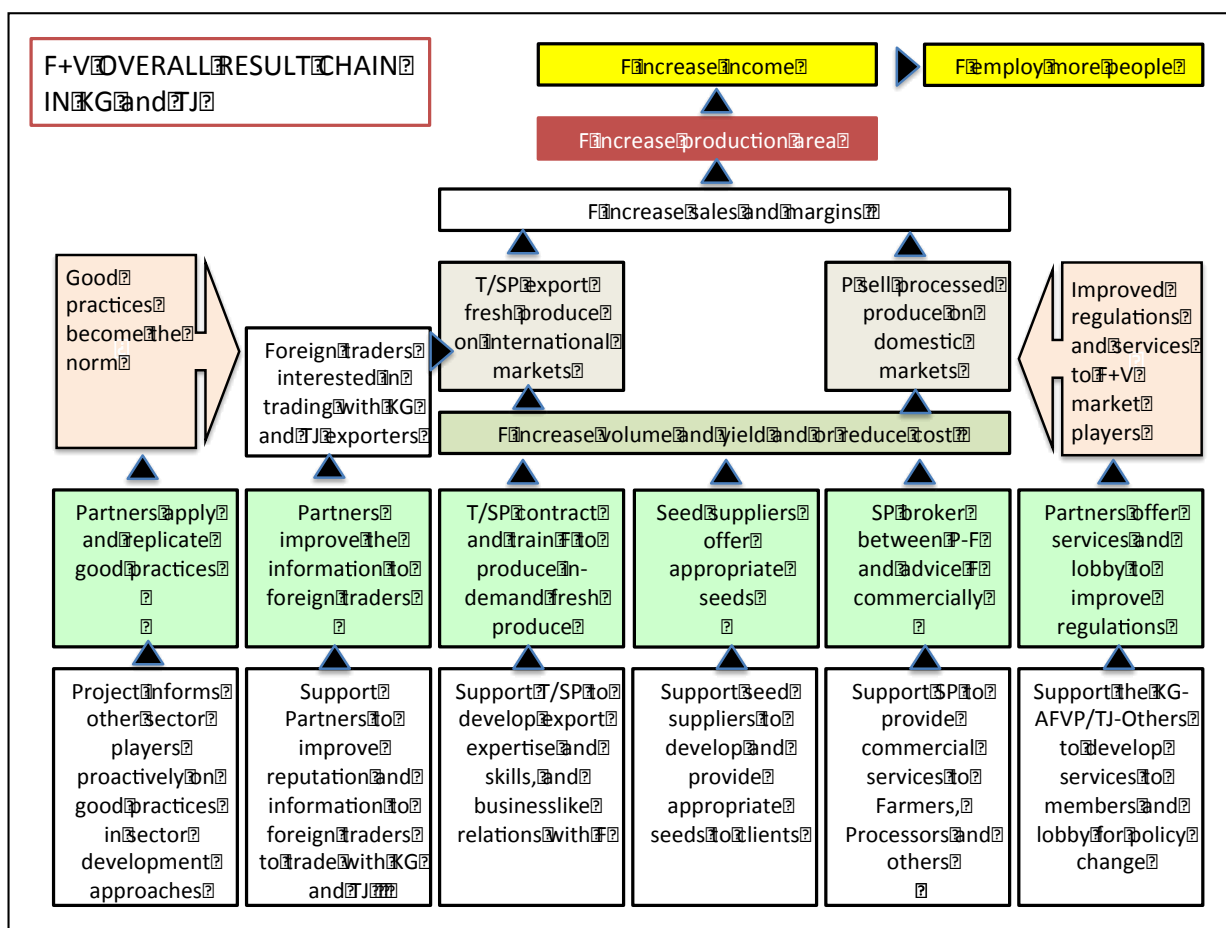


Figure 1: Result chain of LMD project in

Despite a considerable number of development initiatives active in business development, LMD was the first project that consequently worked along a value chain approach and specifically addressed linkages between agricultural producers and processors.

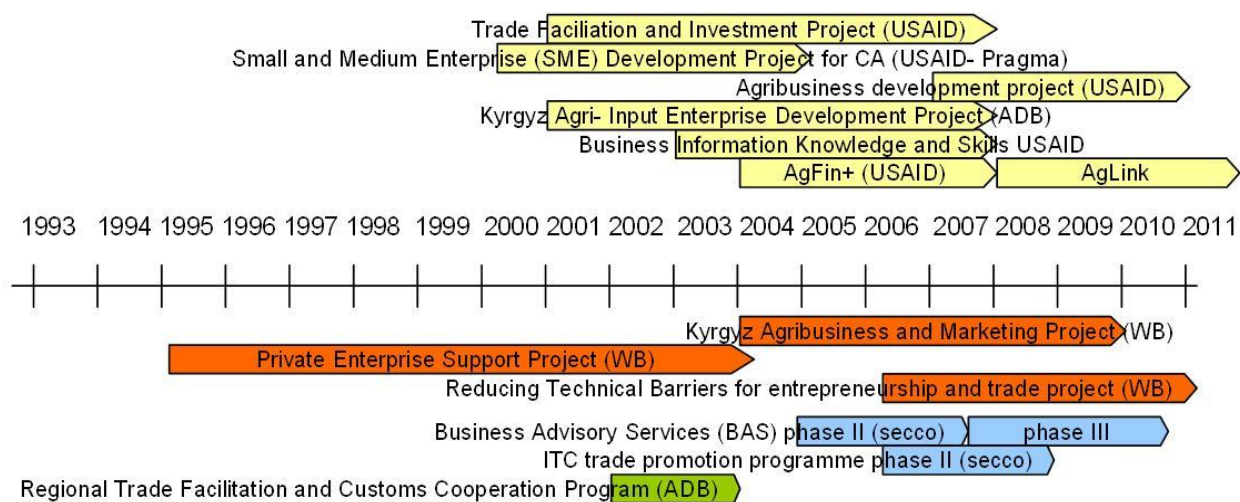


Figure 2: Business development projects in Kyrgyzstan (Annual Report 2014)

3. Objective of the study

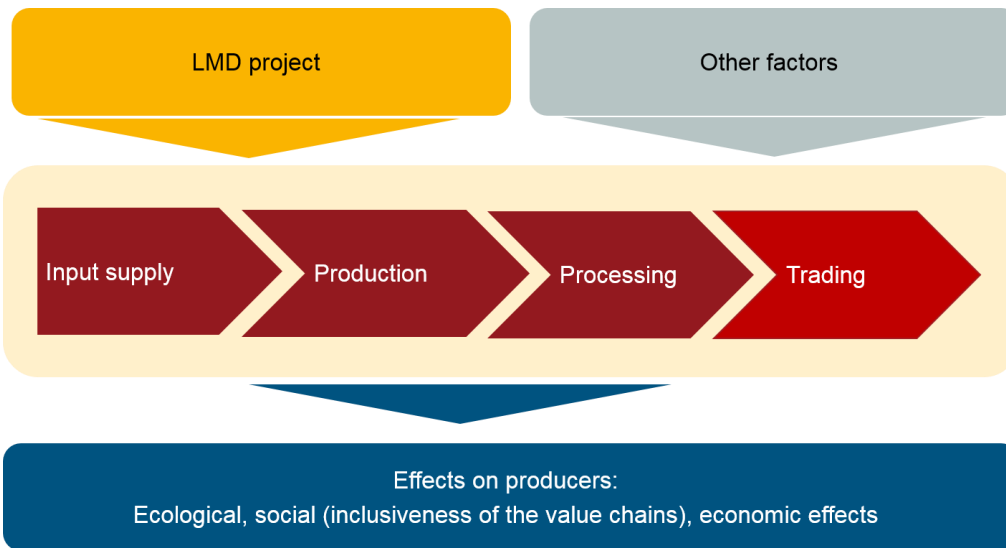
This study pursues the objective to capitalise experiences and to derive learning from the implementation of the local market development project (LMD) in Kyrgyzstan from 2005-2015. It analyses the project's contributions to the fruit and vegetable market system, while focusing on market system change, impact at farm level, as well as on the sustainability of promoted agricultural practices. The objectives are as follows:

1. To document core ideas/innovations of LMD throughout its lifetime
2. To analyse the success/failure/challenges of the promoted value chain models
3. To discuss the results of the various interventions and their outcome/impact
4. To capitalize and document systematically evidences, lessons learned and experiences from LMD serving as input to our learning system

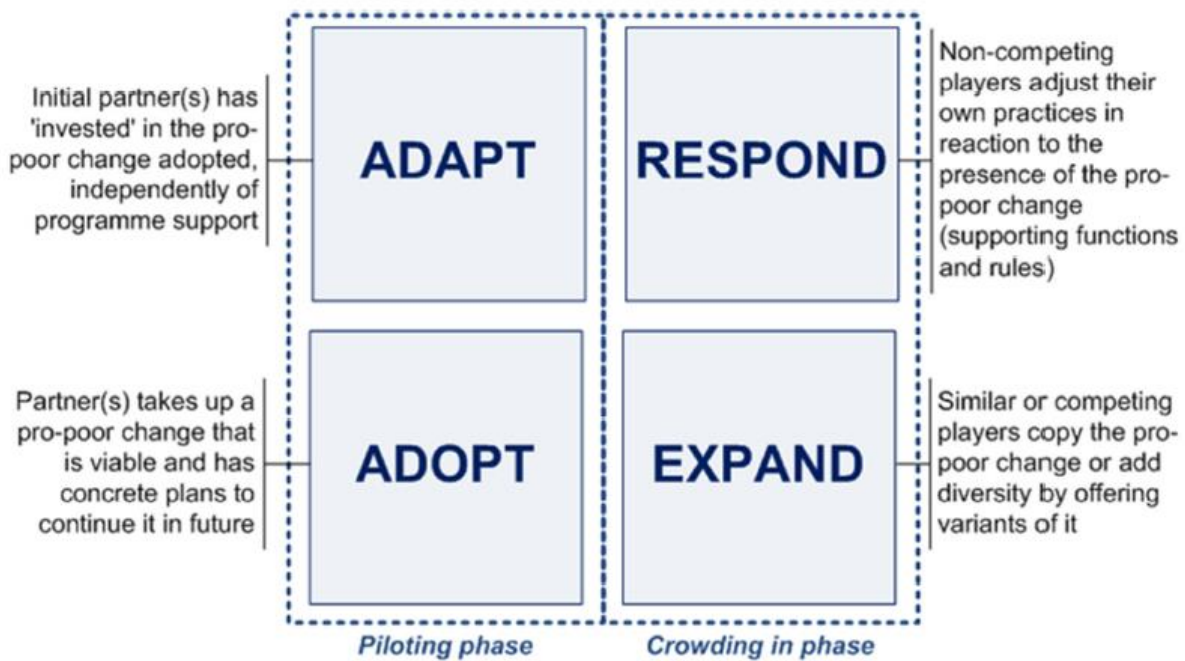
4. Methodology

On the one hand, the study analyses project related documents and available studies on the Kyrgyz fruit and vegetable sector. On the other hand, the author conducted 35 interviews with resource persons, including farmer groups, rural service providers, fruit and vegetable processors, the association of fruit and vegetable enterprises, as well as several resource persons (see Annex 1: Work plan Kyrgyzstan Mission).

In a first step, the study analyses the project's contributions to the development of fruit and vegetable value chains, while taking into consideration other, external factors that complementary influenced respective value chain development. In a next step, the project provides an overview of the value chains' effect on agricultural producers. This overview bases on project's impact analyses that were conducted in 2008, 2012.



In order to analyse the project’s impact on market system development, the study uses Ripley’s and Nippard’s (2014) evaluation framework for M4P projects. They define a “change to be systemic when it has taken root in the market system. In other words, when the new and improved behaviours of permanent market players are sustained, independent of project support, and manifest themselves beyond the market players the project has directly partnered with.” The two authors propose four dimensions of market system changes, as shown in the figure and the table below (Nippard: 2014). The study analyses the project’s influence on market system change by elaborating LMD’s influence on these four dimensions.



5. Overview of the project development over time

5.1. Intervention areas

5.1.1. Geographical intervention area

LMD continuously increased its working area: During the inception phase, the project worked in Nookat and Kara Suu, two districts of Osh Region. In Phase I, the project expanded the intervention area by including the remote Issykul region, as well as starting to work in Chui region around Bishkek. During the second phase, Batken, Naryn, and Jalalabad region, as well as three regions in Tajikistan were added. In the last project phase, the remote region Naryn dropped out due to lack of markets, while Talas was included as a new region. Overall, the project worked in all seven regions of Kyrgyzstan.

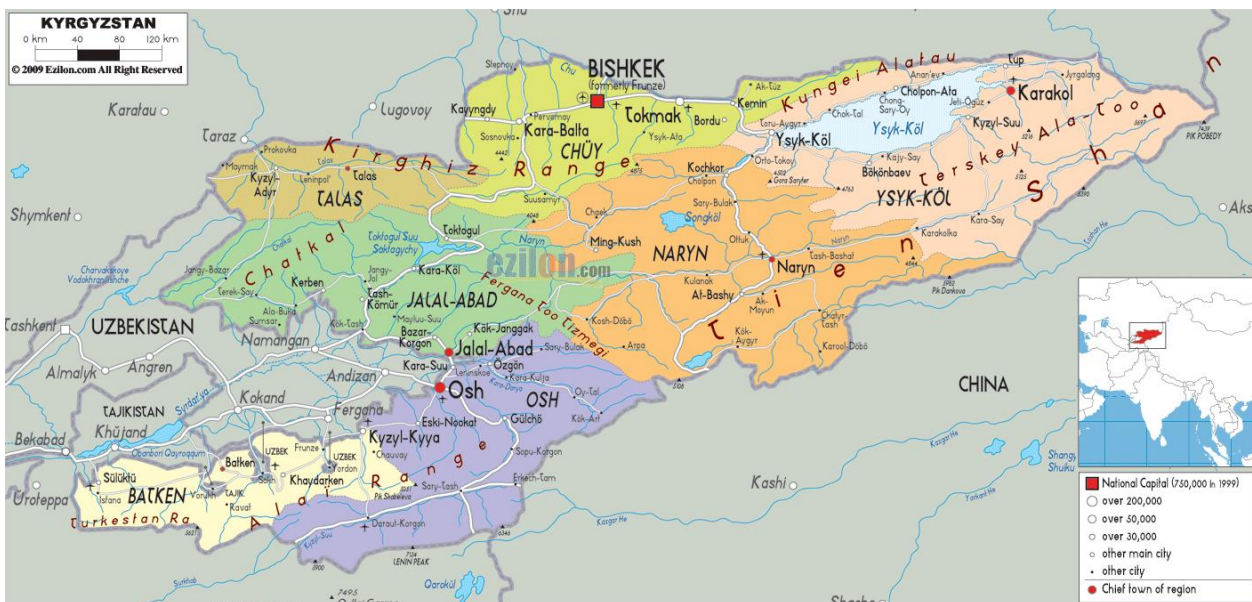


Figure 3: Map of the seven political regions in Kyrgyzstan. Source: Timothyunan 2015.

In the inception phase, the project defined the intervention area not only by regions, but also by distances from fruit and vegetable processors: Initially, the distance between farmer groups and processors should not exceed 20km. After some time, his criteria was weakened, and the distance to processors increased to up to 60km. This increase is explained with difficulties to find enough farmers living close to processors as well as being motivated and able to change their production systems in the frame of LMD.

Whereas in the first and second phase, LMD strived to expand its activities to remote areas, the paradigm shift in the third phase towards more financially sustainable services, combined with a decreasing project budget, led to a concentration of project activities close to the locations of service providers. Some remote areas could not be served anymore with services, since this was not viable for the service providers. Examples for this shift away from remote areas is the phasing out of activities in the southern coast of Issyk-kul, as well as those in Naryn region.

Learning: The selection of the project area always includes a decision about the readiness to pay the costs related to catering to certain areas. Purely market-oriented projects should carefully assess the costs of working in certain areas and the readiness of involved market actors to pay for it. If a project pursues certain inclusiveness objectives despite the possibly higher intervention costs, the project should adapt the sustainability logic for these interventions and possibly foresee the use of public funds in the long run.

5.1.2. Market intervention area

Comparable with the geographic intervention region, LMD continuously expanded its intervention area concerning market activities: Starting with three value chains (cucumbers, tomatoes, and dairy production) and two processors in 2005, LMD supported 13 value chains and worked with 21 processors in 2012, respectively 2013 (see Chart 1 and Chart 2).

The number of farmers and processors involved in LMD continuously decreased since 2013. This is mainly due to the decreasing project budget and related phasing out of farmer groups. One need to note that the figures do not include former LMD farmers that might be still involved in certain value chains but are not part of LMD project anymore. These data are not available.

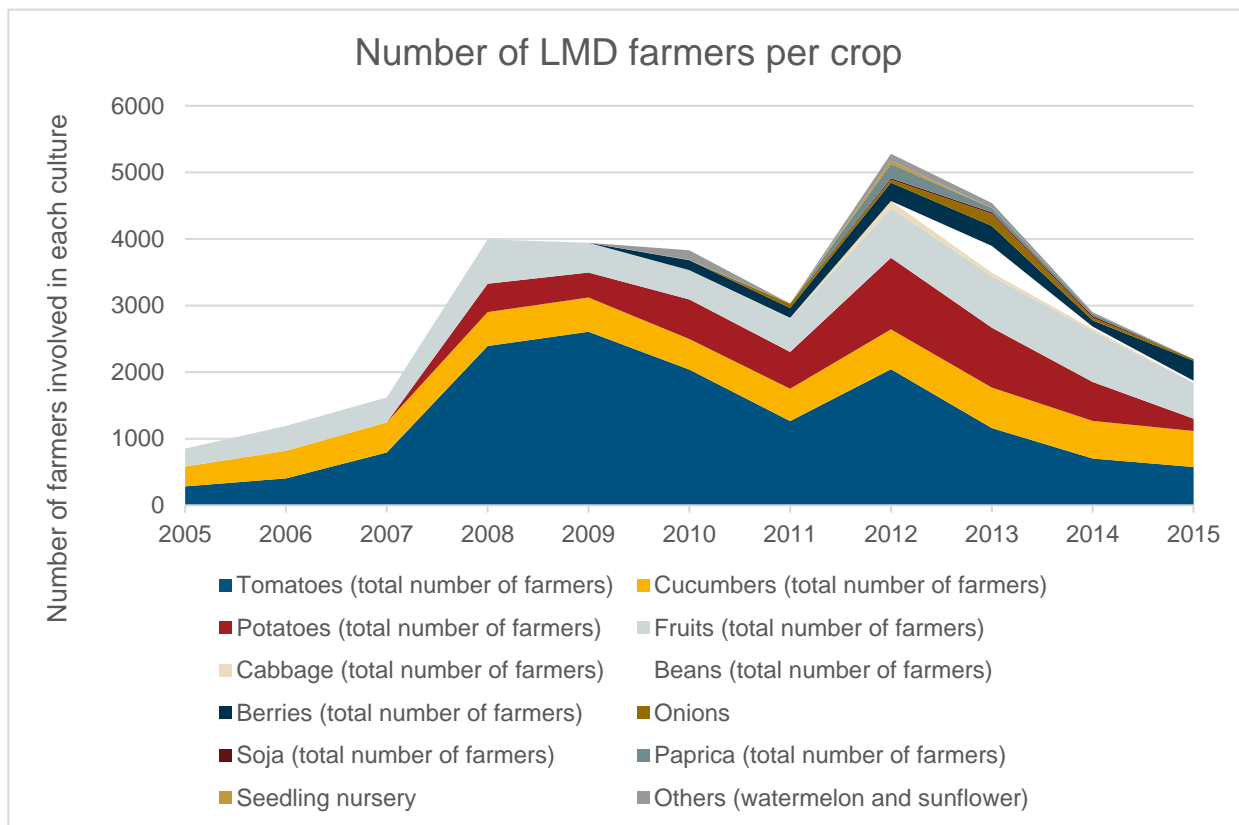


Chart 1: Number of farmers per culture from 2005-2015 (based on information of SPs and annual reports 2005-2015)

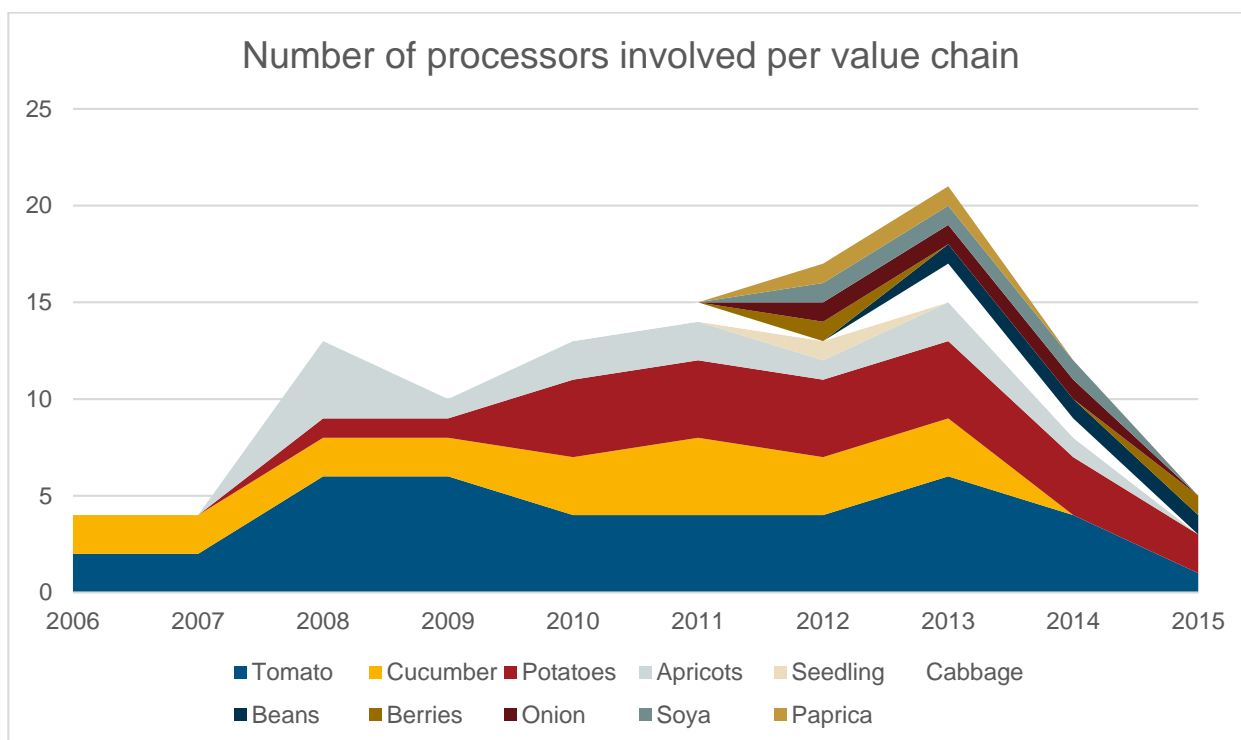


Chart 2: Number of processors involved per crop from 2006-2015 (based on information of SPs and annual reports 2005-2015)

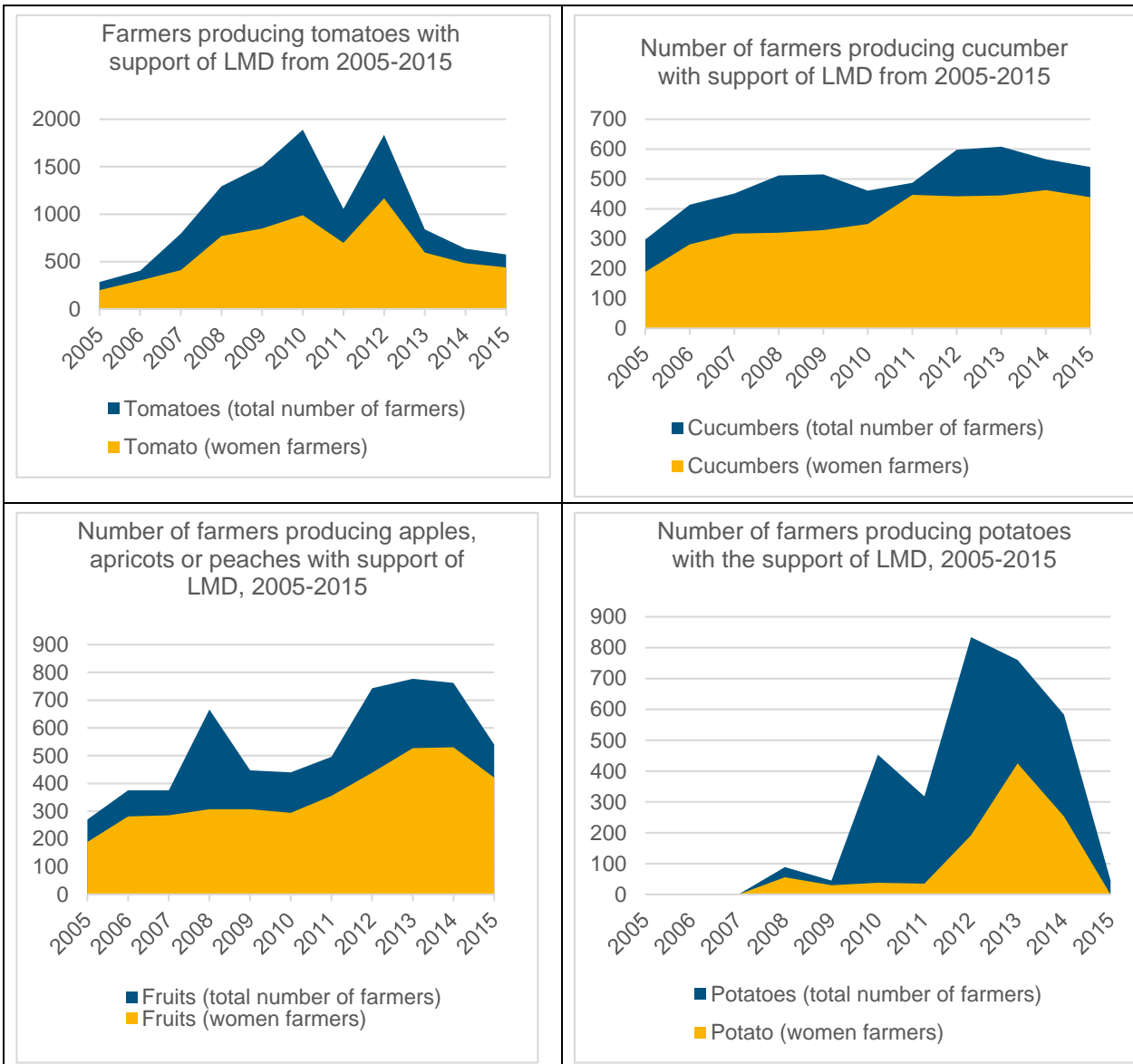
The above figures show that none of the value chains that have been established since 2009, have addressed as many farmers as the original value chains (cucumber, tomato, and fruits). Nevertheless, LMD could increase its outreach by about 20% through the diversification of value chains. Furthermore, by opening new value chains, LMD strived to specifically address women farmers. As shown in the figures below, most of the new value chains include a relatively high share of women farmers, which was one of the project goal.

Many of the new value chains, however, have evolved and disappeared in a short period of time (see below). Usually, the reason for giving up new value chains was lack of continuous market demand and limited readiness of processors to pay for the services of SPs. Furthermore, LMD did not intervene on the level of market demand and had thus to work with those value chains for which a market demand already existed. Finally, one can conclude that a stronger focus on processors' marketing and processing capacities would have been necessary to secure the sustainability of the value chains. In the beginning, LMD had to select partners from a narrow range of processors, which limited LMDs opportunity to select **processors according to their motivation to grow and invest. With the time, more and more** processors entered the market. Against this backdrop, working out clear selection criteria for the collaboration with processors, would have increased the efficiency of the

Learning: LMD's concentration on linkages between processors/traders and farmers made the project prone to fluctuating market demands. Many newly established value chains disappeared because market demand decreased, or did not increase. A stronger focus on marketing and processing capacities of processing enterprises could possibly have addressed this constraint.

Learning: Ensure that processors/traders most continuously demand the promoted products is key for that value chains sustain in the long run. Therefore, investments into processors might become necessary. In order that such investments are effective clear selection criteria are needed: Basically, the processor must be able and willing to invest itself into marketing and production activities.

project. Project investments into processors are certainly necessary but only efficient if these processors are able and willing to invest into their marketing and production. That is why, clear selection criteria combined with certain project investments into processors would have increased the capacities of value chains to sustain. Other value chains might be interesting pilots, but risk to disappear after the project intervention.



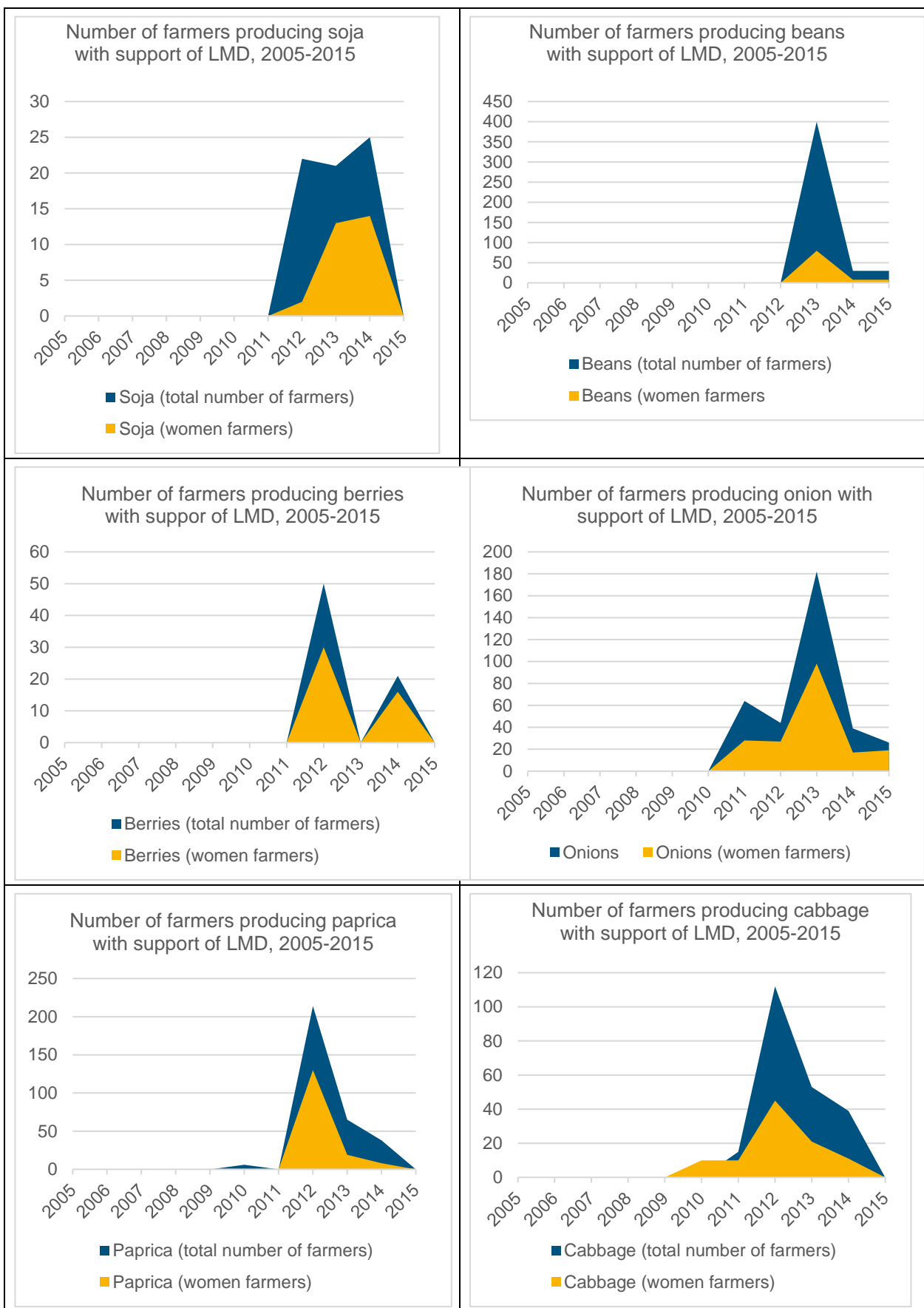


Chart 3: Development of selected LMD value chains over time (Source: SPs and project reports)

5.2. Evolution of LMD monitoring approaches

At the beginning, LMD developed a comprehensible monitoring tool, which was consequently applied until 2013 and included the following aspects:

- number of farmers,
- amount of produced and sold crops,
- farmers income through LMD activities,
- area under fruit and vegetable production (IPM / no IPM),
- costs of brokering and training services,
- financial contributions to services from processors/traders, as well as from farmers

The purpose of such comprehensive monitoring tool was twofold:

1) Measuring the project's impact

2) Allowing the service providers to measure and thus show evidence of the success of their work. The idea was that the partners would measure and thus "own" the data. The interest of partners on the data remained however limited, which also limited data quality.

This allowed for considerable analysis as e.g. the Impact Study in 2012, as well as detailed reporting on project results. Despite the consequent and broadly set-up monitoring, there are limitations of the database, which finally constrains analysis of the overall impact:

- There is no baseline study and traceability of particular farmers from one year to the other is not possible. Thus, the project's impact – change of income – is not measurable.
- Marketing activities of phased out LMD farmers have not been monitored. It is thus not possible to analyse how long-lasting LMD interventions really are.
- The database does not indicate how long a farmer participated in project activities, which renders counting of total number of beneficiary impossible.
- The database includes a relatively high number of unrealistic data, in particular data on yields and income of vegetable production per area. Without triangulation questions, LMD could not address the risk that interviewees mix up yield per ha and yield of the total field size.

Finally yet importantly, since 2008 the project works towards achieving the DCED standard. In October 2008, LMD participated in a DCED mock audit, which it did not pass, mainly due to the lack of a clear logic of intervention, as well as an insufficient link of planned interventions with the anticipated impact (Annual Report: 2008). Despite several efforts to align the result chains and monitoring to DCED, the second mock audit in 2014 showed critical results (traffic light system: 4 green, 18 yellow and 5 red statements). In April 2014, a Junior International Advisor joined the project (LMD KG, 50%) with the main task to revise the project's M&E system and to prepare the

Learning: In order that service providers monitor their impact, a clear market demand for correct data should be available. A compensation from the project for data monitoring might be such demand in the short run, however, it does not increase partners' interest to deliver high quality data in the long run.

Learning: Tracking of beneficiaries – at least of a selected sample – is crucial to measure the overall impact of a project. An impact assessment by the end of the project has identified the difficulty, if not impossibility to initiate former project beneficiaries in order to get information on their situation after the project intervention. Therefore, a selected sample of beneficiaries should be tracked during the entire intervention period, although the project does not work with them anymore – an activity that requires great effort, but finally pays off with important data on impact.

project for the DCED audit. (MTR: 2014) Due to limited probability of passing the audit, and relatively high costs, the project later on decided to go without the DCED audit.

After all, one observes that these regular changes in the monitoring system and the development of the new database according to DCED standards brought considerable discontinuity into the monitoring system, which finally affected its overall quality. The main reasons for this are the delay in developing the new database (a process that started in 2013 and has not been finalised) as well as insecurities about whether the project will pass a real DCED audit or not. Other reasons are changes in result chains and their measurement, as well as changes of responsibilities for data collection: e.g. Agrolead was formerly responsible for data collection and made data of 2012 and 2013 available on an online database. This database is not accessible, since Agrolead's mandate has phased out. As a result, data has been collected but not filled into the ACCESS or excel database since 2013, and since begin of 2015 they are not made available at all.

In order to measure LMD's impact, despite these discontinuities, the Helvetas team decided to conduct a final impact assessment of LMD activities, which does not base on the LMD monitoring system but on quantitative interviews with around 400 LMD beneficiaries from all project phases. A selection of results are discussed in chapter 7 "Effects of the interventions at farm level".

5.3. Evolution of project staff and changes in intervention approaches

From the start, the project worked with a minimal number of staff and delegated as many tasks as possible to its partner organisations. It employed one project manager as well as three project officers until 2011, and one project officer since 2011.

Such small project team was at that time quite an innovation, since it gave the partners a strong role in the project from the beginning. In consequence, the LMD team invested a lot into the capacity building of partners. Later, many other projects, e.g. the Efficient Water Use Project, or the Bio Cotton project could benefit from LMD's investments into capacity building of the partners.

The project experienced two significant changes in the management: In the first and second phase, **Eugeny Ryzanov** worked as a project manager. By the end of 2012, **Meerbek Erdoolatov** was employed as his successor, and in 2015, **Samat Toignobaev**, the former project officer, took on the job as project manager working without additional project staff.

Both changes had considerably influenced project implementation. The first management change came in parallel with the shift towards an M4P project. Due to a stronger orientation of the project donors towards financial sustainability of the intervention, the new management put a stronger focus on the financial viability of service providers, and therefore phased out former project contributions that were considered as not financially viable:

Learning: Changing the intervention logic of a project (e.g. from a value chain to an M4P approach) risks to disrupt the project implementation, since the project team and partners have to re-orient themselves in the new logic.

Learning: Continuous monitoring as well as traceability of beneficiaries over time is key for impact analysis. Changes in the monitoring system, in particular of indicators, bear a great risk of rendering formerly adequately collected data inapplicable for final impact assessments.

Learning: A small project team obliges the project to externalise activities and thus to invest into capacity building of partners. Such capacities are later available for new initiatives from the private or the public sector.

Learning: The attitudes of project managers significantly influence the overall project development, and staff changes can considerably affect the continuity of project implementation and monitoring activities.

In particular, during such influencing changes, backstopping and project guiding of higher management levels are crucial.

- Phasing out support to some former project partners (RAS Chui/Talas, RAS Issykul, Shoola), which were seen as not financially viable
- Phasing out support to the Association of Service Providers “Agroconsulting” (see chapter 6.2.2)
- Phasing out support to “Agroinform”, a service provider that conducted data analysis and developed e-applications for spreading resulting data to farmers. Although the project has phased out its support to Agroinform, the organisation today still acquires service mandates from diverse donors, which can be seen as a result of the successful capacity building of the project.
- Stronger focus on areas close to markets and service providers instead of remote areas, in order to enhance the potential of service providers to offer self-financed services.

In addition, in parallel to the change in management the project decided to align monitoring to DCED standards. This evoked a considerable discontinuity in monitoring and reporting activities:

- Joint reporting with LMD Tajikistan was given up (although due to ICCO’s preferences)
- There was an intention to develop a new database aligned to DCED standards. Due to several reasons, the new database has not been finalised, and data from 2014 and 2015 has not been analysed systematically. Finally, data of the last phase is not easily comparable with the former database, which renders continued monitoring specifically time consuming.

The following figures depict the interventions in the second and third phase and shows the phasing out of specific interventions.

Interestingly, the project carried on its support to service providers while it phased out the support to most of the other institutions. This shows on the one hand the shift from institutional capacity building to single value chain support done by service providers. It is further a sign of the growing focus on financial sustainability: the support to service providers has been considered as having a chance to becoming financially sustainable (paid by processors and traders), while the support to associations appeared to demand long term public funds (probably from donors). In particular when it comes to stimulating the demand for certain products and thus enhance sustainability of value chain, these associations are crucial: they can influence policies on a higher level than individual actors can do.

Learning: Even though, the growing focus on financial sustainability of the interventions might have made project interventions more effective in the short run, it brought about a decreased focus on institution building, which again affects sustainability in the long run.

Phase 1 and

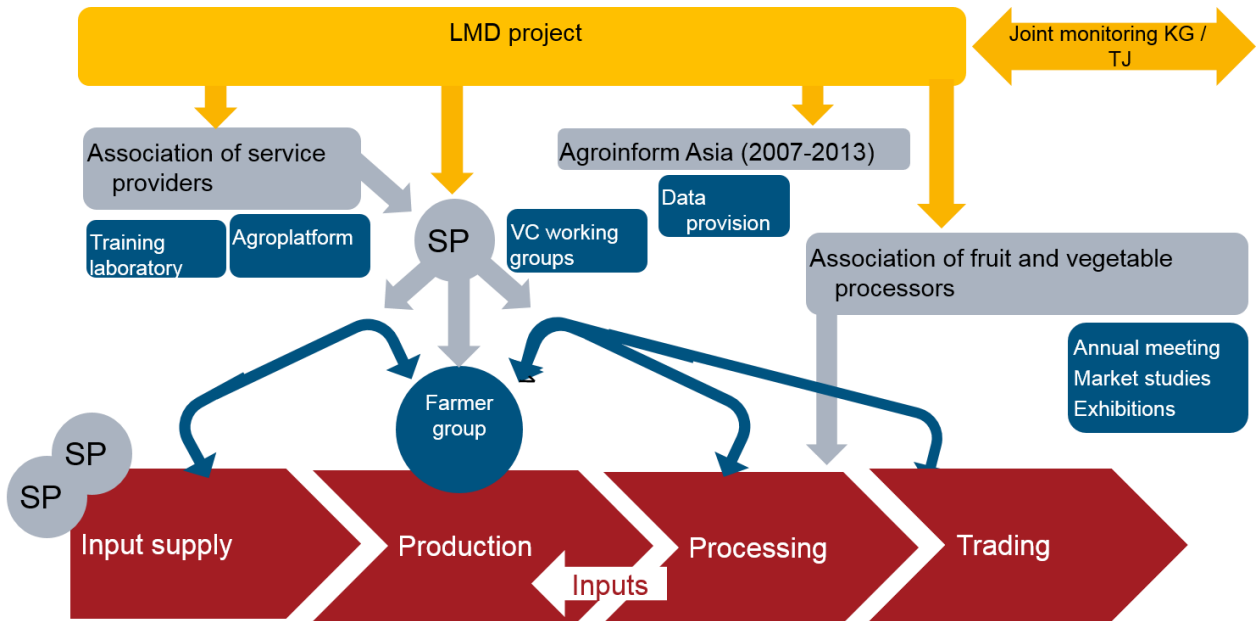


Figure 4: Intervention scheme of LMD by the end of phase 2 (own figure)

Phase 3

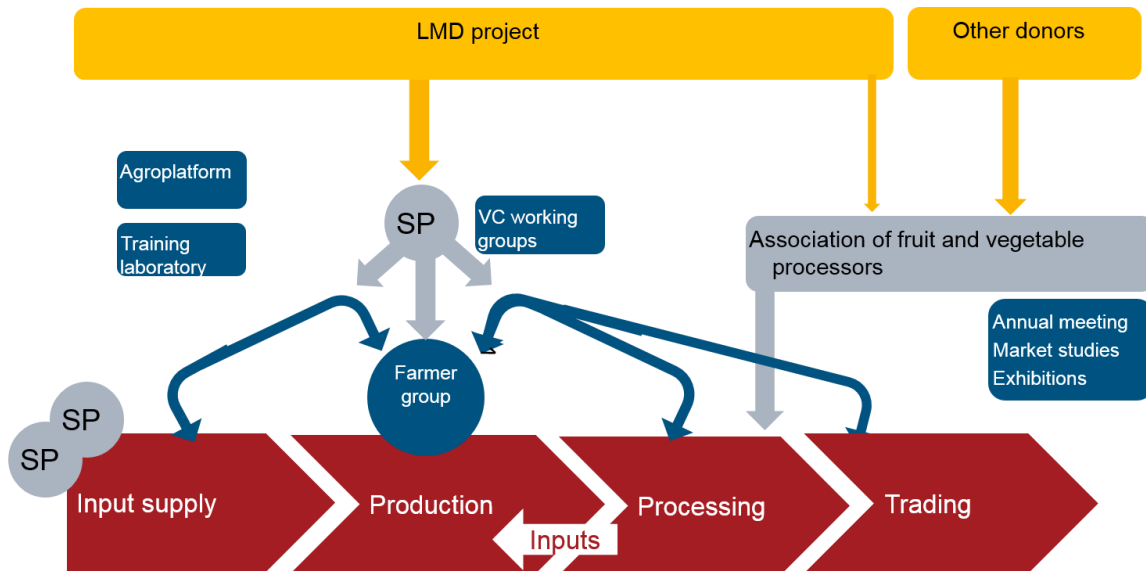


Figure 5: Intervention scheme of LMD by mid-phase 3 (own figure)

Legend

Project contributions	Value Chain Actors
Supporting functions	Supported services

6. Project contributions to the fruit and vegetable market system

From a “value chain development” approach to a “making markets work for the poor (M4P)” approach

In 2012, the project decided to shift from a value chain approach to a M4P approach, respectively a market systems development approach (MSD).

Because of the shift towards an M4P approach, LMD again analysed the market system, defined relevant support functions, and identified systemic and sustainable interventions.

Despite formulating systemic interventions, e.g. to facilitate the supply of quality seeds through commercial input suppliers or to facilitate access to value chain finances, the project faced challenges in re-orienting the activities towards a full M4P approach. Looking at the below market system scheme, it becomes evident that some market actors were not or only weakly addressed, e.g. the ministries, SMEs, schools, and lead firms. In order to effectively enhance the quality and availability of all required support functions, LMD would have need to make a full shift to an M4P approach by integrating a broader range of market actors. This, however was challenging since project staff as well as project partners were used to the former interventions, and time to reach results was with only one phasing-out phase short. (Annual report: 2013). Further, there was only one one-week M4P-training for all involved staff and partners in 2012.

Learning: The shift from a value chain approach to an M4P/MSD approach requires basic reflections on the project interventions and the openness to add or phase out interventions. LMD kept its approach to work via SPs, and with this limited the work with additional, possibly more suitable market actors. LMD’s basic idea to work via SPs therefore constraint the full shift to an M4P approach – this would have required to address a diversity of most promising market stakeholders.

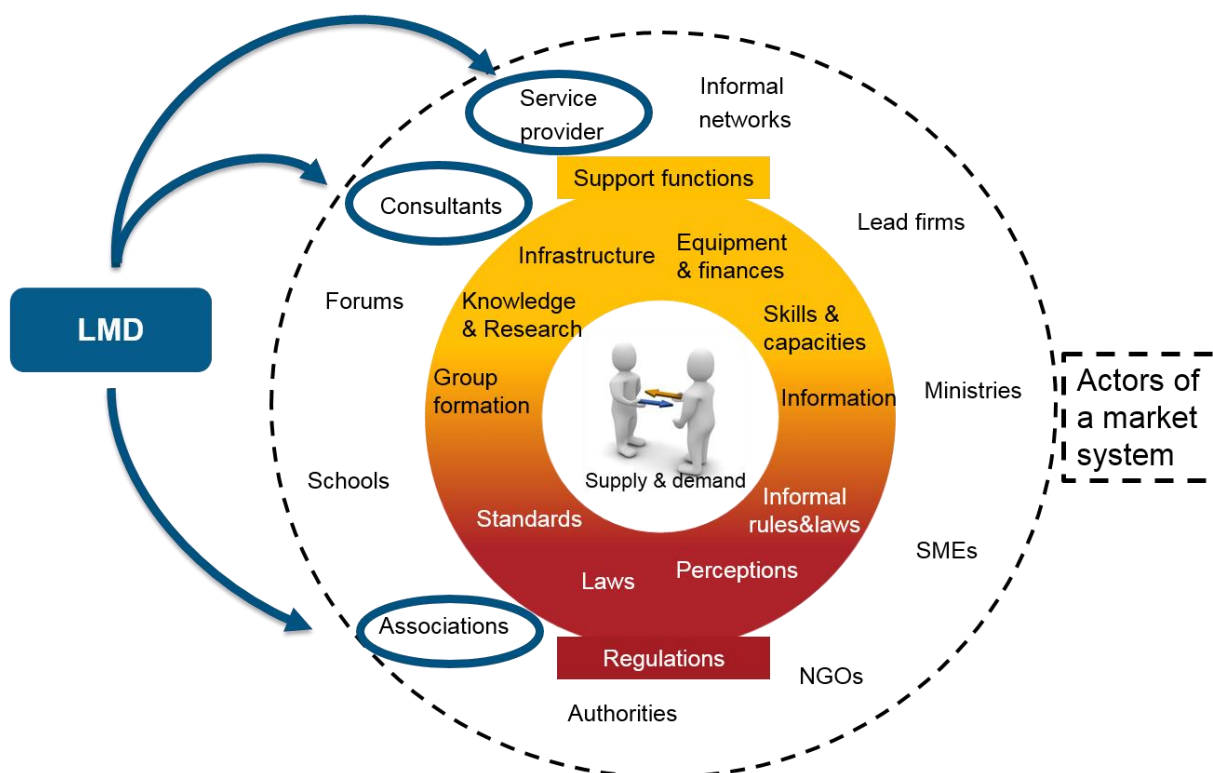


Figure 6: Stakeholders and institutions of the market system and LMD's support (adapted from Dietz (2015))

As a result, beside a stronger focus on financial viability of services, the “newly” defined systemic interventions only slightly differ from the former LMD interventions. As before, the project contributed to the core functions of the market systems not directly, but via support functions: the service providers as main support function (in the context of LMD, NGOs are called service providers), the consultants, and the associations. In addition, LMD did not limit its contributions to the core functions, but continuously strived to strengthen the capacities of the above-mentioned actors. This now allows the supporting actors to sell their support to other actors – mainly donor organisations, but also private sector companies. The following chapters analyses these diverse project contributions to the market actors, support functions, and regulations.

Learning: LMD emphasised on strengthening the capacities of the supporting actors that it mandated. Looking at the current situation, one sees that this intervention was a key contribution to the market system: today, many supporting actors are mandated by new actors.

6.1. Contributions to the core functions of the market system: supply and demand

LMD contributed to the core functions of the market system mainly indirectly, via supporting actors. It thus already followed a market system approach before it started to name itself a M4P project. That is one of the reasons, why the change from a value chain approach to a market system approach in 2013 did not evoke fundamental adaptations of the project interventions.

In well-functioning market systems the supply meets the demand and the other way round. Thus, the below described support to the demand or supply side can always also be seen a support to the supply or demand side, respectively. This study, however, defines supply side support as activities at farm level, whereas demand side support includes activities at processor and trader level.

Learning: In functional market systems, supply and demand meet each other. M4P projects should thus keep in mind both sides equally, and adapt interventions if one or the other side is comparably weak. While LMD strengthened the supply side, the demand did not equally grow. This led to a comparably small absorption capacity of the market for the produced crops.

6.1.1. Support to the supply side: activities at farm level

LMD defined four interventions to increase profitability of field and marketing activities of farmers, which would according to the result chain enhance farmers' income. The interventions included 1) trainings on integrated production methods (IPM) and other improved production methods for selected crops, 2) facilitation of access to agricultural inputs and 3) access to finances, as well as 4) the establishment of linkages to output markets, mainly to processing enterprises. Based on these combined interventions, LMD strived to reach a change in farming and marketing systems.

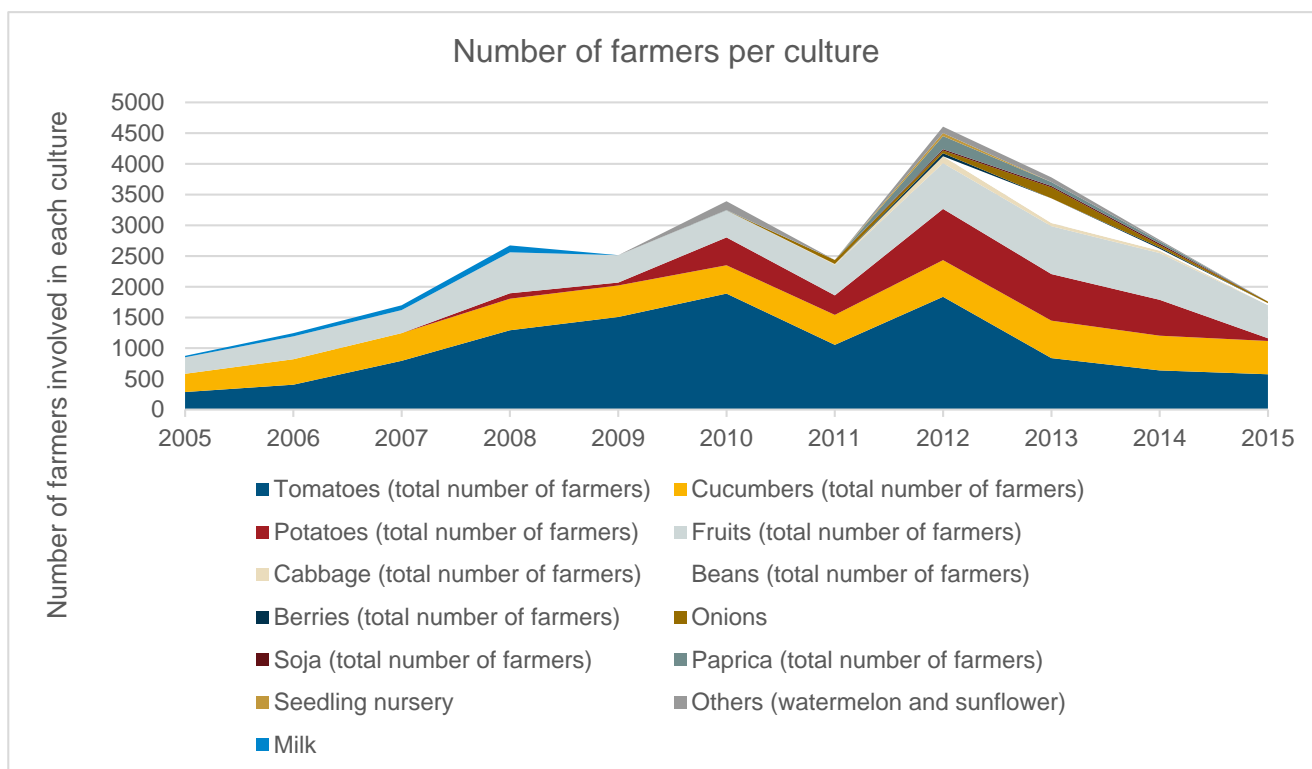


Chart 4: Number of LMD farmers per culture (based on information from SPs and project reports)

Training on IPM and other enhanced production methods

LMD mandated and capacitated SPs to train producers on how to grow the requested quantity and quality of selected crops. As shown in the figure below, until 2007, these trainings focused on cucumber, tomatoes, fruits, and dairy production. Over the course of time, more and more crops were included as training topic.

Due to the decreased use of chemicals and its focus on soil fertility, the project considered IPM as most beneficial to farmers. LMD therefore continuously aimed at including IPM in as many as trainings as possible. Nevertheless, the share of IPM trainings decreased with the rapid increase of number of farmers: obviously, the number of trainers did not grow as fast as the number of farmers. In order to reach results on IPM, the project put greater efforts in training of trainers (ToT) on IPM from 2009 onwards. This is led to an increased share of IPM farmers on total farmers.

These IPM trainings, however, have not been requested by the market, and none of the processors/trainers was ready to cover the relatively costs of IPM trainings compared to trainings on enhanced production methods only. Nevertheless, the IPM trainings were substantial in terms of understanding of ecology of the farmers. Today, LMD farmers that participated in IPM trainings are able to explain the principles of IPM, and can thus probably also better understand also other important aspects of ecology in farming, e.g. organic farming or efficient irrigation management. This understanding is added value in environment where basic education on ecology was missing.

In this regard, LMD did not consequently follow the M4P approach, which would have required a training offer that is fully based on a market demand. In the opposite, it decided to offer trainings that will not be paid by private partners in the long run, but that can add value to the environment. With this, LMD did not strictly follow private market demand, but pursued an own objective: to enhance ecologically sustainable agricultural production. To the author's opinion, this is a courageous and important decision of LMD. Investments of public funds always require a reflection of what is the public interest behind the investment. If the public interest is not identical with the private market interest, development projects – and in particular M4P projects – should be free enough to invest funds into these public interests. Such funds might not be available in the long run, but the invested money can have a long term impact of what happens at field level: In the case of LMD, this is the knowledge of farmers and trainers on IPM that influences agricultural practices although there was and still is no a direct market demand for IPM products.

Learning: The content of ToTs directly influences what is taught on field level. ToTs are thus a significant means to influence training contents of service providers in the long run.

Learning: LMD invested into IPM trainings although there was no real market demand for IPM products or trainings. Such derivation from the M4P approach was necessary to include the public interest of supporting environmentally sustainable agriculture. Although IPM trainings will possibly not be financed in the long run, they considerably influenced the way trainers and farmers reflect on ecology in agriculture - an achievement that could not have been reached by strictly following the M4P approach.

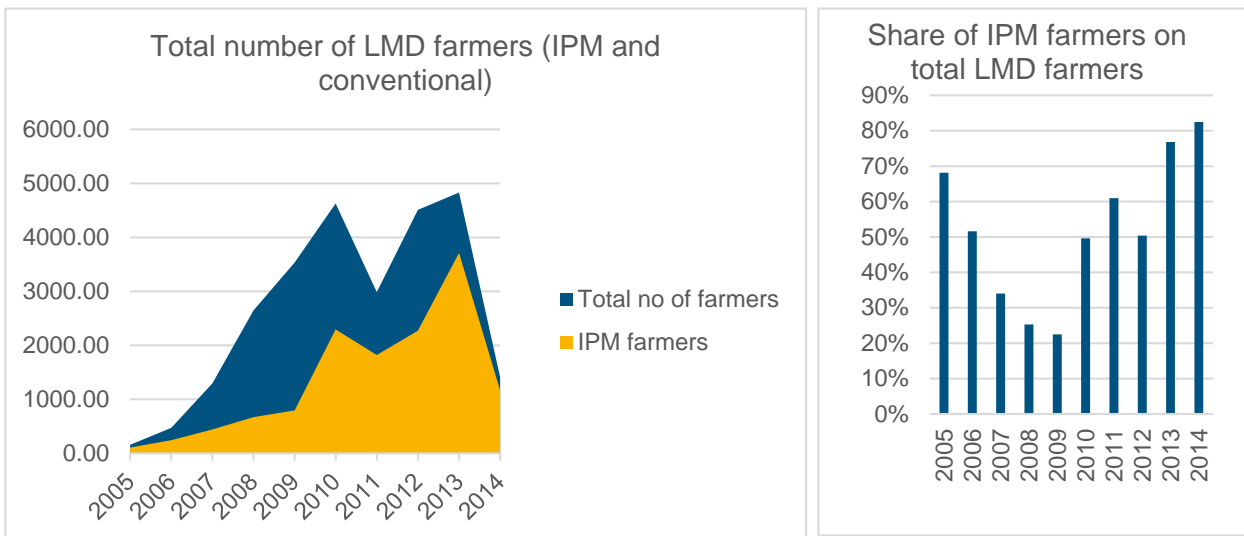


Chart 5: Share of IPM farmers on total LMD farmers 2005-2014 (based on project reports and Dischl (2012))

Access to quality production inputs



Photo 1: Recently established input shop of RAS Batken (Stefanie Kaegi: 2015)

When LMD was launched, access to inputs was a highly limiting production factor. This was and still is because Kyrgyzstan imports almost 100% of agricultural inputs from Uzbekistan, Kazakhstan, and Russia, and only recently, European and Chinese Companies entered the market (ICCO: 2013). Access to inputs is thus not only a logistical challenge, but depends on the supply from international markets and corresponding prices. In order to support the input supply market, LMD developed a sort of “yellow pages” of input suppliers. This way it could show to farmers and to suppliers where inputs were available, and where inputs particularly lacked. In addition, LMD worked along three

approaches to support farmers' access to inputs. In all approaches, farmers defined their needs for agricultural inputs during the value chain working groups or trainings:

1) SPs facilitate **agreements with processors** to pre-finance at least a part of requested inputs. The following interviewed processors still provide such pre-investments to producers, sometimes independently of project support: Agroplast in Kyzyl-Kya, Oska in Manas, Dessert in Manas (Brand Ekfrut), Balapan in Jalalabad, and Ailana in Manas.

2) **Embedded services:** SPs act as input suppliers and sell inputs either directly or via processors to farmers. SPs appreciate such embedded services as a complementing source of finances. SPs applying this approach are RAS Jalalabad, TES center, and Agrolead.

3) SPs link farmers to **existing input suppliers** or support the establishment of new input shops. Examples are RAS Batken, Agrobilim, Mehkr Shavkat.



Photo 2: Agricultural input shop at RAS Jalalabad and sold herbicide from Syngenta (Stefanie Kaegi, 2015)

Learning: In Kyrgyzstan, embedded services are yet one of the major means for SPs to generate an own income besides donor funds.

Today, one observes, that the SPs derive financial benefits from offering embedded services. Those SPs that offer embedded services have the highest share of own generated funds: RAS Jalalabad generates up to 20% from total budget through the sales of inputs, and Agrolead has opened a new trading entity allowing the NGO to generate profits based on input sales and trade. Agrobilim and RAS Batken e.g. generate no funds with the sales of inputs and are yet close to 100% dependent on donor funds.

There was only little internal discussion on how to address the ecological and social risk of such embedded services, which can appear when trainers see greater incentives for promoting sales of inputs instead of promoting IPM or ecological agricultural. LMD did not affirmatively address this risk, and instead trusted in the organisations' ecological and social orientation. Such decision makes sense as long as SPs receive most of their funds from donors that are interested in promoting sustainable agricultural practices. This holds the SPs accountable to donors, which does not allow them to promote practices that are too far away from ecologically and socially sustainable practices.

Learning: Donor dependency of SPs limits the ecological risks and possibly financial risks of embedded services as long as these donors are effectively interested in promoting ecologically sound agriculture.

Access to finances

When LMD set off, farmers faced problems in accessing finances for agricultural production. Most credit lines of existing finance institutions were inappropriate to farmers' needs and required collaterals from farmers, which they did not have. In this context, ICCO and GIZ supported three NGOs in the foundation of own credit institutions that directly addressed the needs of farmers (see box).

LMD did not have the capacity to support such new credit institutions or lines, but it made use and complemented the intervention of ICCO and GIZ as follows:

- LMD encouraged SPs to offer credit options supported by ICCO and GIZ to LMD farmer groups.
- LMD mandated a local consultant to **publish** brochures on existing micro finance institutions and input suppliers in order to distribute this information to among value chain actors.

- SPs supported **linkages between processors and project farmers groups** with the goal that they offer not only an output market, but also pre-financing of agricultural inputs (Annual Report: 2006).
- SPs established **saving groups** with almost all LMD farmer groups. Although the original idea of these saving groups was to allow farmers investing in agricultural production, farmer groups finally used the funds for family needs, such as wedding parties or renovation of houses. The sustainability of these saving groups cannot be assessed definitively, since former farmers fell out of the monitoring system. Based on the interviews conducted in the frame of this assessment, saving groups still exist in 3 out of 11 interviewed former farmers groups

During the lifespan of LMD, the finance sector rapidly grew and now offer more or less easily accessible individual loans to farmers. Thus, access to microfinances is not anymore a constraint for farmers today. The sector, however, looks different when it comes to access to trade finances. Yet, the availability of adequate and well suitable credits for trade is limited. Thus, access to trade finances remained a strongly limiting factor for the growth of the processing and trading sector.

Micro Finance Institutions and NGOs:

Three NGOs founded their own microfinance institutions (MFI). All follow a not for profit principle, which means that the generated income feeds back directly to the fund. Since the NGOs have limited means to make farmers paying back the loans, none of the funds grew since their foundation, but all slightly decreased. The MFI do not ask any collaterals for loans, but provide loans only to farmers they know and work with, With this approach they can limit the risk of loosing funds.

- Sachavat Mikrokredit was founded by Mekhr Shavkat in 2002 with the goal to provide initial funds to saving groups (10'000som/group). In 2005, it became a microcredit organisation offering short-term credits exclusively for farmer groups. They charge an interest rate of 1.5% per month, respectively 2% since 2015. Since 2014, Sachavat also offers credits for individuals (26% interests annually). In total, Sachavat already provided credits to 4000 farmers with a total value of USD 1'200'000.
- The bank of RAS Jalalabad, Sary Chelek, was founded with the support of GIZ (1.5 million som) in 2007. The bank offers individual credits with 3% interest per month, as well as group credits without asking any collaterals. Yet it provided loans with total value of 3 million som to farmers.
- TES center founded the Agrocredit Plus MFI in 2005 with support of ICCO. It ask 24% interest annually without collatorals. Credits are offered only to farmer groups working with TES center, and having well prepared Techcart (kind of business plans). In 2007, TES center complementary opened the AGROLINE, an agroinput company. Agrocredit has been directly linked to AGROLINE in order to pre-finance inputs to farmers. In 2012, TES center closed the AGROLINE Company due to loss of staff that could not have been replaced.

Access to output markets

From the beginning, LMD did not limit its support to the production side, but worked towards functioning linkages, mutual information exchange, agreements and market transactions between the demand and supply side. This contribution is described in chapter 6.1.2: Contributions to the demand side: processors and traders.

Cost of services

In order to provide these services, LMD mandated in total nine local NGOs, called agricultural services providers (SP). The costs of services per farmer payed by LMD were regularly monitored. They cover the fees for trainings and the brokering activities of SPs, but do neither include the overall institutional development of the SPs nor the capacity development/ToTs.

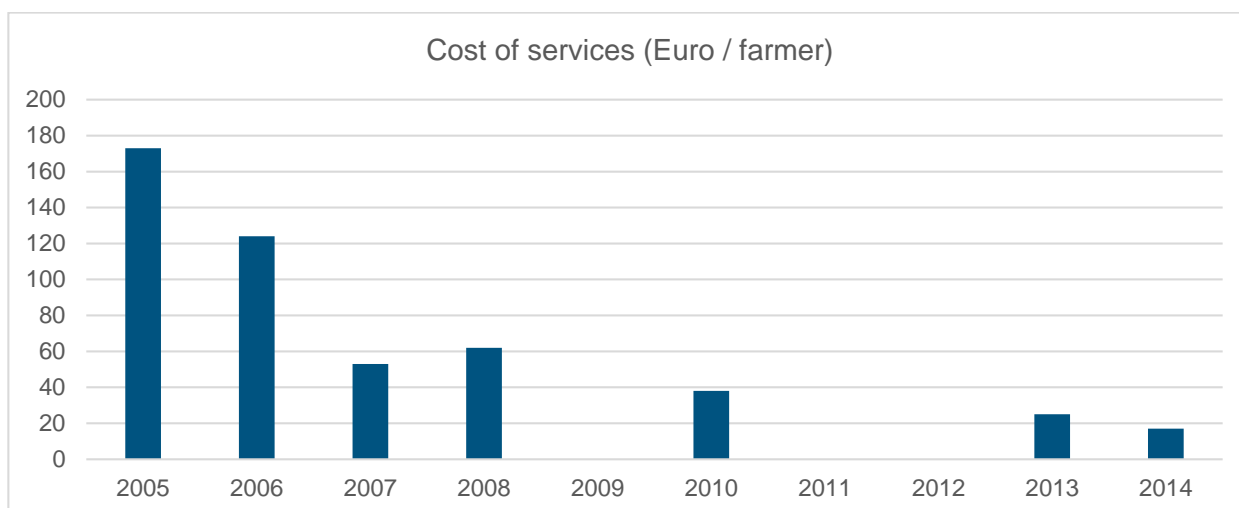


Chart 6: Cost of services per farmer (based on Dischl (2012) and project reports 2012-2014)

The chart shows a decrease of service costs per farmer. This is explained with the following aspects:

- 1) **Decreasing of training intensity**, respectively number of trainings per farmer
- 2) **Affirmative action towards increased cost efficiency**: In the first phase, the project calculated and compared the efficiency of diverse services, monitored and supported organisations to develop cost-efficient services. This allowed the project to better understand the real costs of services and set prices more realistically. Altogether, this can be seen as the main reason for decreasing service costs.
- 3) **Increasing co-financing of the service costs by processors and traders**: It is not possible to define the effective contributions of processors to the costs of the services. Due to a tax law which is not supportive for such transactions and discourage the co-financing mechanism, co-financing is often not done officially and both side are reluctant to provide concrete data about financial contributions.
- 4) **Phasing out of mandates to SPs that worked in remote regions or in regions with low marketing potential**: These SPs did not generate additional income from processors (e.g. phasing out of Shoola, working in the southern shore of Issyk-kul)
- 5) **Shift towards farmers that are situated close to the service providers** in order to save transportation costs (e.g. in 2013, Agrolead shifted its activities from Naryn to Talas).

Learning: Close monitoring of cost efficiency and comparison of diverse approaches gives a project the opportunity to select most efficient methods. This requires a comparably high investment in the beginning, but supports service providers' reflection on prices and creation of cost-efficient services.

6.1.2. Contributions to the demand side: processors and traders



Photo 3: Women workers in OSKA processing enterprise in Manas (Stefanie Kaegi: 2015)

LMD did not support Fruit and Vegetable Processing Enterprises (FVE) directly, but worked via two supporting structures: On the one hand, it strengthened the capacities of the **AFVPE** to coordinate FVE, to advocate for their interests, and to provide basic market support and information. On the other hand, LMD supported the processors to secure supply of the required quantity of agricultural produce. Therefore, LMD mandated **service providers** to facilitate planning and sales of production jointly with agricultural producers and processors.

Support via the association of fruit and vegetable processing enterprises

The AFVPE was founded in 2003 in the frame of the “Support to Private Initiatives Project (SPIP), the predecessor of LMD. When LMD set off, the association united already 12 of the 30 Kyrgyz FVEs (SENTI: 2004). LMD pursued the objective to strengthen the AFVPE in way that it is able to offer attractive services to its members. The focus lied on marketing through a joint brand, lobbying at national level, and market information provision. LMD expected the association to become financially self-sustainable based on membership fees, which increased from 200\$/year to 500\$/year in 2015, and by promoting and selling the brand “Taste of the Sun”. LMD therefore financially supported the association to promote and deliver the following services to clients. In addition, the association was invited to participate in the comprehensive trainings for other service providers and could benefit from diverse on the job trainings by the former project manager.

Membership work

The association continuously grew in terms of number of members. Starting with 12 members in 2004, it increased to over 50 members in 2015. This was possible due to a growing fruit and vegetable processing sector, thus more processors, as well as due to the association's decision to open up also for other sectors by including e.g. meat and dairy processing enterprises. The association organised annual meetings for its members to strengthen exchange and to plan next year's activities. These annual meetings were fully financed by LMD or later other donors.

Effects: Today, the association unites about 46 members out of 347 small to middle processing companies (AFVPE: 2014). About 30% of the processors working with LMD are members of the association. The motivation for joining the association differs by interviewed processors: While some join because they see considerable benefits in particular from the association's information provision and the participation at exhibitions, others are only members because donors support them to join. Some claim that the association is working weakly and they do not see any benefits from being a member (anymore). KRISTALL, a relatively new processor was not informed that such the association exist at all. It is not fully transparent, who pays how much membership fees: while some pay more or less regularly, others are fully exempt from fees.

That is why, instead of **financing its work** through membership fees and through the income of the trade house, the association is currently most successful in acquiring donor-funded mandates: GIZ, ICCO, Hilfswerk Austria, UNDP, and British Expertise provide considerable funds and mandate the association for diverse activities. As a result, the association's services are (still) donor oriented and cater to whatever donors consider important, respectively worthy to finance.

Advocacy work

LMD and later other donors provided institutional funds to AFVPE to lobby for a conducive policy environment for the fruit and vegetables processing market.

Effects: The AFVPE bears expected fruits: On the one hand, the association has achieved considerable results, such as:

- **A VAT tax exemption** for processing enterprises for three years (2009-2011) and again for six years from 2012-2017.
- **Release from profit-tax** from 2010-2012, and again from 2013-2015 for agricultural processing enterprises.
- **Prevention of new tax rules affecting the sector** negatively: In 2013, Pepsico lobbied for an exemption of any customs fees on imported juice concentrates. This would have negatively affected local juice producers and therefore the farmers. Also due to the lobbying activities of AFVPE, this exemption was not adopted at least until 2014.

Learning: Although tax exemptions increased conduciveness of the business environment of the sector, the April revolution and later ethnic conflict in Osh 2010, considerably hampered attraction of foreign investment to the country.

Learning: the long-term support of LMD allowed the association to proof its effectiveness in advocacy. This currently allows the association to acquire continued donor support for lobbying work.

Market information

The association published an **analysis of the fruit and vegetable sector** on a four-year basis (2004, 2008, 2012), and **annual reports** including a **directory** of the FVE in the country. Besides, it developed papers, such as development strategies to enhance the market potential of Kyrgyz products or analysis of procurement methods. In this regard, LMD financially supported the AFVPE to mandate external consultants, such as e.g. CENTI or M-Vector.

Branding Kyrgyz products

AFVPE developed and promoted the brand “Taste of the Sun” since 2005. The brand served to product marketing in national and international, mainly Russian and Kazakh, markets. It created a side income for the AFVPE that derived one percentage from sales of “Taste of the Sun” products. Until 2009, market volume of Taste of the Sun products increased from 20,000\$ to 1,300,000\$. In this year, AFVPE founded a trade house for Taste of the Sun, elaborated a marketing plan for the brand and successfully integrated it into the assortment of one of the largest national supermarket chain Narodny. During the revolution in 2010, Narodny experienced huge losses of Taste of the Sun products, which it did not reimburse to the trade house. This spoiled trust between the two market institutions and finally collaboration was given up. The trade house reassumed the activities around the brand with support of GIZ in 2011. Due to lack of convincing business plans, LMD phased out contributions to Taste of the Sun until 2014, when it again supported the brand to develop a new label and to amend information on packages according to international requirements.

Learning: by providing numerous mandates to a local consulting agency, LMD built unintentionally local capacities, which today contribute to the overall development of the sector.



Figure 7: Former and new logo of Taste of the Sun (Annual Report: 2014).

Effects: While none of the interviewed processors sells its product under the brand “Taste of the Sun”, most are convinced that branding is crucial for marketing and some have already developed their own brand (e.g Ekfrut, OKSA). This can be attributed to LMDs/AFVPEs initial work around “Taste of the Sun”, which was the first brand for agricultural processed products of Kyrgyzstan, proving that branding can enhance sales opportunities. Interestingly, the leader of the consulting enterprise M-VECTOR that has worked many years for AFVPE said that thanks to his experiences with LMD he realised how important branding is. He developed “EKFRUT”, one of the fastest growing brand, and advises and supports processors to establish their own new brands (Pogojev: 2015).

Support linkages between processors and international markets

AFVPE informs its members on existing market **exhibitions or fairs**, and invites selected members to participate. Depending on the donors funding participation at exhibitions, the processors co-finance e.g. transportation or accommodation.

Effects: Members consider invitations to exhibitions as one of the most effective market development activity of the association. Processors hold the exposure to international market actors in high regard, and they are convinced that such linkages are most relevant to enhance demand for processed products from Kyrgyzstan. Yet, however, only one LMD processors could establish sustainable market relationships through the visit of these fairs. Others claim that they lack trade capital and the capacity to assume the risk of entering trade relationships that require relatively high pre-investments.

HASP standard From 2013-2014, LMD financed one expert working for AFVPE to provide trainings and certification on HASP certification by educating respective trainers and controllers. In view of Kyrgyzstan’s integration into the custom union with Russia, Kazakhstan, and Belorussia, this service is highly appreciated by processors. (Annual reports 2013/14)



Effects: With a bit more than 10'000\$ annually, the association, however, could only provide information and training to a limited number of processing enterprises, but not support them in really implementing the standard. They now still lack the capital to invest into the required infrastructure for HASP certification. Despite donors supporting AFVPE’s capacities to provide HASP related services, too, still only one of the interviewed processors has realistic perspectives to acquire HASP certification in reasonable time.



Photo 4: Manager of OSKA presenting the certificates for his participation at trade exhibitions (Stefanie Kaegi: 2015)

Value chain finances

From the beginning, LMD realised that value chain finances is one of the core limitations for the growth of the sector. It therefore mandated the AFVPE to submit proposals to banks and to lobby for better loan conditions for value chain actors, in particular processors.

Effects: One among about 17 microfinance institutions in the country, Bai-Tushum, developed a new credit line suitable for processing and trading agencies (Annual Report: 2011). While the BioFarmer Cooperative that is trading with organic cotton has made use of the credit line 2014, none of the LMD processors mentioned to have accessed such credits. Besides, the Kyrgyz Government annually around 5 billion KGS loans to the agricultural sector at a relatively low interest rate of 9-10%. AFVPE lobbied the Ministry of Agriculture to provide a part of this attractive government loans to the agricultural processing sector. As a result, out of the 5.1 billion KGS the processing sector benefited from 700 million KGS, respectively around 10-14% out of the total available government loans in 2014. (Annual Report: 2014).

Learning: Lack of trade capital is often the primary reason that market actors mention if they explain why they don’t grow. Before starting interventions related to trade capital, one needs to consider the readiness and ability of these actors to assume market risks, which might be a hidden and more important reason, why markets don’t grow.

Despite these results, the work of the association, respectively the contributions of LMD to value chain finances, did not enhance processors’ capacity to invest into trade. Exempt from the brand

Ekfrut and the processor OSKA, all interviewed processors claim that they lack trade capital for investing into increased quality and quantity of production. They have limited collaterals and do not generate enough profit to cover high interest rates of credits. In general, processors show low willingness to assume market risks, which is according to Pogojev (2015) one of the main obstacle for market development. The question remains, whether it is lack of access to trade finances or limited willingness to take risk, which hinder most LMD processors to enhance production. Some processors, however, do grow despite of volatile markets and the named challenges to access loans.

Contributions to processing and trading enterprises via agricultural service providers

Beside above-mentioned contributions, LMD pursued the goal to create sustainable linkages between agricultural producers and FVE. Therefore, it supported FVE via SPs, to elaborate contracts or informal agreements on supply of products with agricultural producers. The number of processors directly addressed by agricultural service providers is shown in the figure below:

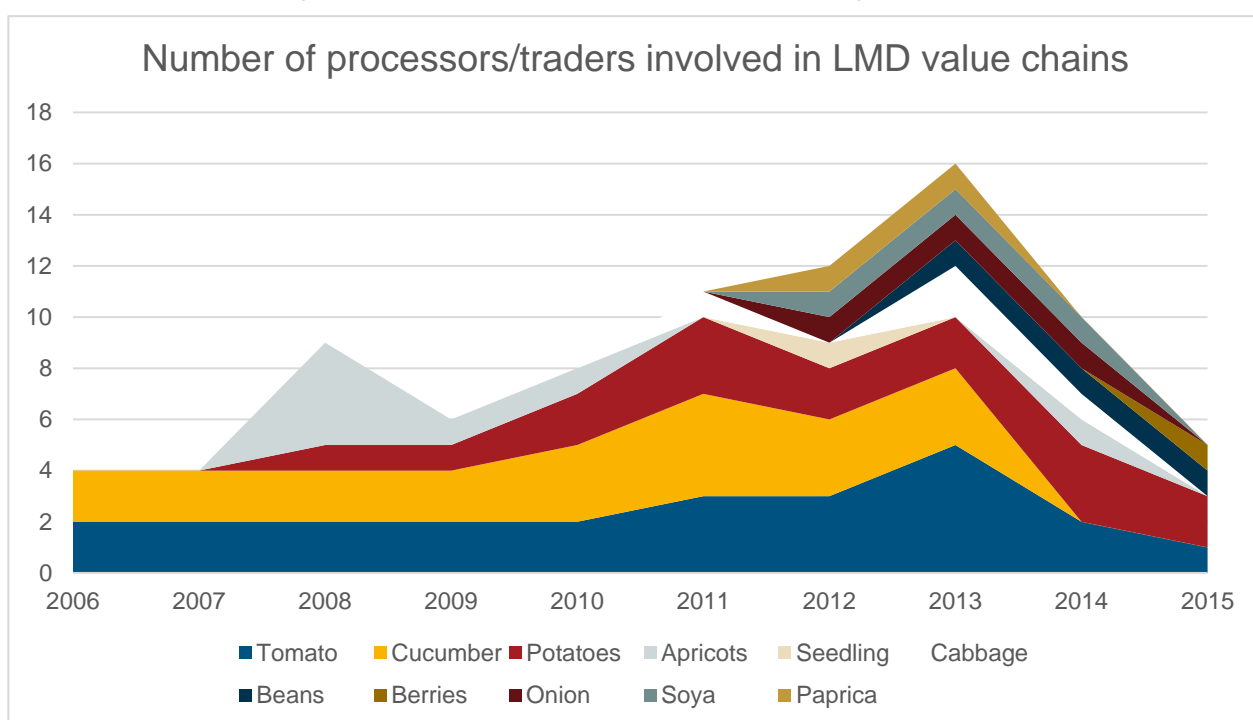


Chart 7: Number of processors and traders involved in LMD value chains from 2005-2015 (based on information of processors and annual reports 2006-2015)

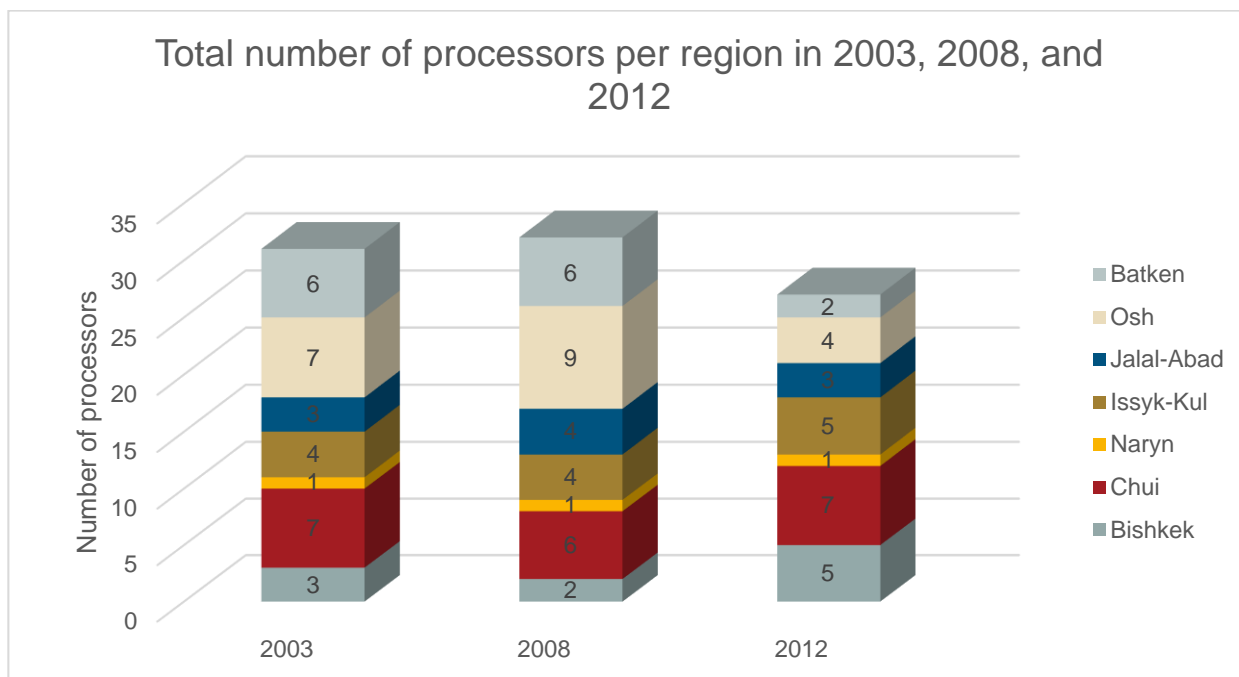


Chart 8: Number of processors per region in 2003, 2008, and 2012 (based on SENTI 2003, 2008, 2012)

One clearly sees that the number of involved processors and traders almost continuously enhanced until 2013. With the start of the phasing out phase and decreasing budget, this number fast decreased. On the one hand, the services of the SPs are not requested anymore because linkages have been established or do not function without project support. On the other hand, some SPs claim that they still offer the services, but in an informal way. An example for this is an advisor of TES center that still support cucumber value chains with AGROPLAST, but don't mention it as a project activity.

SPs offered the following possibilities for these processors to meet, exchange and plan production and sales:

Value chain working groups

SPs organised monthly meetings for all stakeholders of a specific value chain in a region, namely leaders of farmer groups, processors or traders, input suppliers, and service providers. These meetings provided a frame to plan production, to exchange about challenges, requested training and inputs, and to agree on expected supply of products and sales prices. In the beginning of each season, working group members (SP, farmer group representatives and processors/traders) were motivated to develop tripartite agreements between SPs, companies and farmer groups to plan quality, quantity and prices of products.

Learning: With the introduction of a volume-based payment system, LMD emphasised on written agreements between processors and suppliers. Given the unfavourable conditions to written agreements (tax law) it would have been relevant to search for and support alternatives to formal agreements. This might have been more adequate and supportive to all concerned stakeholders.

Effects:

For processors and farmers these working groups were key to create mutual trust, which was necessary from either side. Processors could follow production progress and were therefore ready to offer pre-payments to farmers, while producers only dared to adapt their production according to the

needs of processors when they were sure about the buyers' interest in the product. In this sense, these working groups were a key intervention, and fully new in that time.

In contrary, the agreements between processors and producers were not taken up as well. It seems that they were rather developed because SPs pushed processors to do so, and not because these agreements would have weigh much when it came to the performance of the contract: Right enforcement remain weak in the country, thus such agreements, although written, do not have a binding character. Accordingly, both sides report that agreements were rather a formality than a paper that enforced reliable planning. Disappointments exist on both sides, when either supply or demand did not meet the expectations due to fluctuating prices, surplus supply, or bid markets.

Further, the agreements should have included a compensation for the SP paid by the company. Because of tax issues, the SPs as well as the processors preferred payments that were not defined in a written agreements. Thus, payment to SP have not been organised in a transparent way as foreseen by LMD. Such tripartite contracts are today not legally accepted anymore.

These are the reasons, why many of the value chain working groups continued to work without written agreements.

Those that continue working with contracts or agreements, indicate only required quality of the produce and the amount to be delivered to the company. They foresee a pricing system, which refers to unpredictable market prices at sales time and do not include pre-agreed prices. Timing of sales is neither defined.

Agroplatforms

These are by-monthly roundtables hold for above-mentioned VC stakeholders as well as local government representatives and donor founded initiatives. LMD mandated SPs to organise these meetings in a rotational system and to define contents based on current events and stakeholders' priorities. Topics included e.g. information about micro credit agencies, annual statistical data on the sector, systemic approaches of rural advisory services and embedded services, rural innovation, etc.

Learning: Platforms for information exchange and coordination that do not generate a direct private benefit for stakeholders are hardly maintained without public financial support. If they are considered relevant, a project should aim at assuring long-term public finances for these platforms to be maintained

Effects: The platforms are one of the means to promote LMDs approach of VC development to other actors. Stakeholders claim that these platforms increased exchange among actors that without platforms would not have been meeting each other. Some processors claim that these platforms enhanced their trust into the tripartite market system since they could see how others successfully work. Despite this positive feedback of stakeholders, none of them expects these platforms to sustain after phasing out of LMD finances – a fact that already this year became obvious.

6.1.3. Effects: Some data on the development of the Kyrgyz fruit and vegetable market

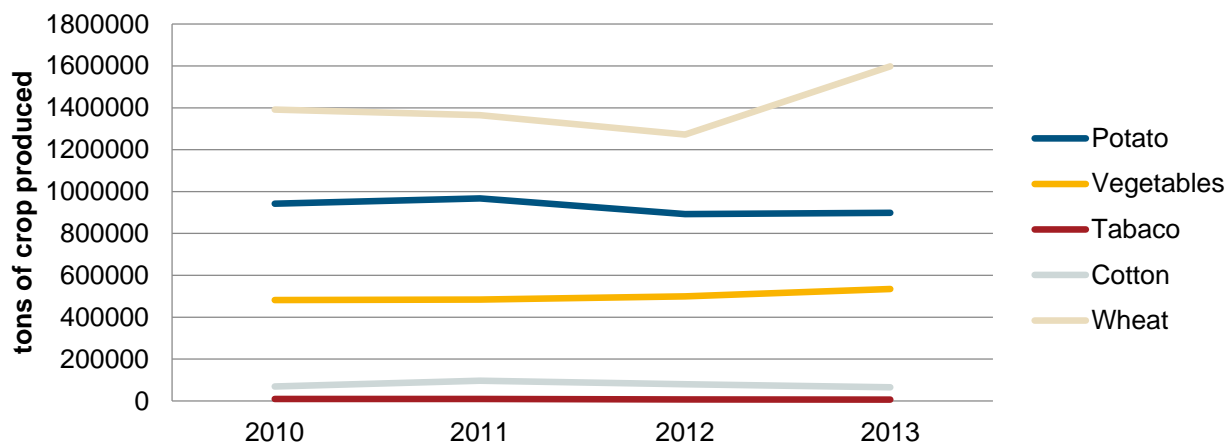


Chart 9: Total crop production in Kyrgyzstan from 2010-2013; (based on http://www.agro.kg/ru/agro_prices/5408/)

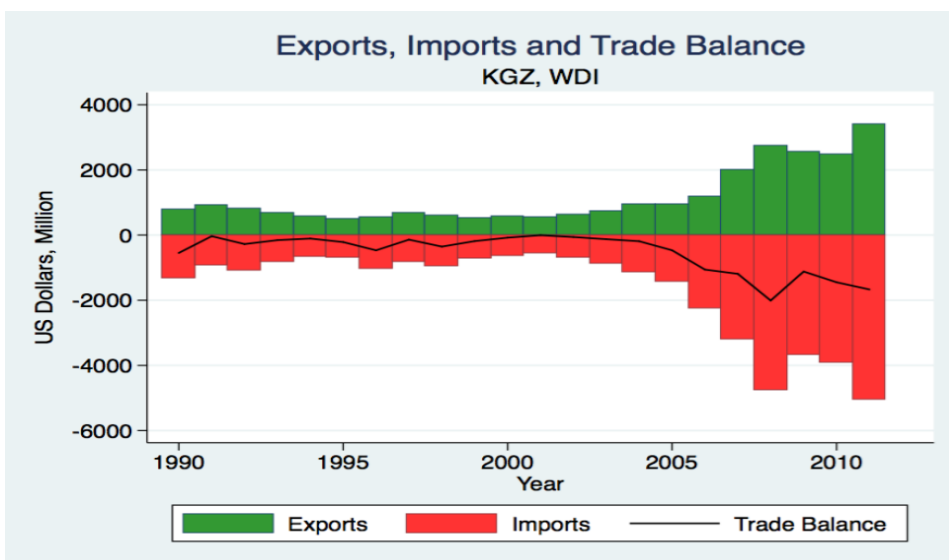


Chart 10: Export, Imports and Trade Balance of the fruit and vegetable market from 1990-2010 (M-vector: 2013)

The M-Vector study (2013) concludes that Kyrgyzstan remained a net importer of the processed products specified in the below chart.

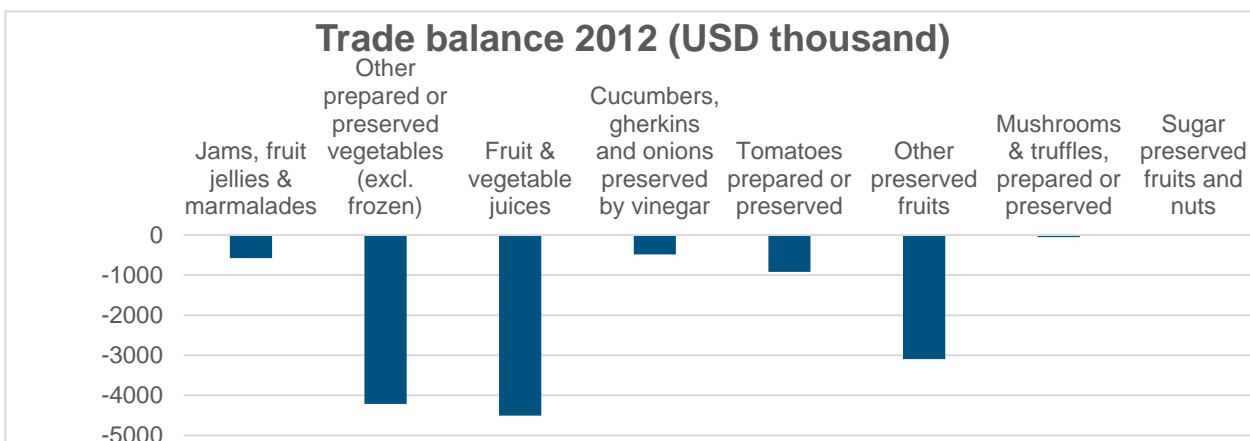


Chart 11: Trade balance of processed fruits, corn and vegetables in Kyrgyzstan, 2012 (based on M-Vector: 2013)

As shown in

Table 1, the value and the quantity of most imported fruits, corn, and vegetable products increased from 2008 to 2012. Exceptions are some fruit and vegetable juices and mixtures of juices.

Product	Trade Indicators			
	Imported value 2012 (USD thousand)	Annual growth in value, 2008-2012 (%)	Annual growth in quantity, 2008-2012 (%)	Annual growth in value, 2011-2012 (%)
Tomatoes, prepared or preserved other than by vinegar or acetic acid	1051	30	5	194
Potatoes prepared or preserved, o/t by vinegar or acetic acid, not frozen	1580	45	33	89
Peas prepared or preserved, o/t by vinegar or acetic acid, not frozen	1539	28	5	18
Cucumbers and gherkins, prepared or preserved by vinegar or acetic acid	335	25	24	32
Apple concentrate, Brix value > 20	1241	9	1	52
Apple juice, Brix value <= 20	905	9	15	-1
Other fruit & vegetable juices (excluding mixtures)	822	-13	-14	-62
Mixtures of juices	716	-35	-43	39
Tomato juice	433	11	9	15
Jams, fruit jellies, fruit/nut purée & paste	564	9	21	91
Home prep (jams, fruit jellies etc)	341	20	16	44

Table 1: Value of fruits and vegetables, imported to Kyrgyzstan (USD thousand) (based on M-Vector: 2013)

The development of trade indicators from 2008 to 2012 differs by products: Some values and/or quantities of products significantly increased, e.g. potatoes, dried fruits, or jams, while the value and/or quantities of other products decreased, e.g. fresh tomatoes, fruit and vegetable juices, and preserved tomatoes. Interestingly, the main LMD products (preserved tomatoes, fruit and vegetable juices gherkins) decreased or grew only very slightly (5%). This shows the limited impact LMD did have on the overall market situation. According to some processors, the limitation for growth lied in a satisfied demand from Russia, while other, more innovative processors claim that growth did not happen due to the limited investment capacities of processors and their lack of ability to take risks. Potatoes are the export product with the highest growth rate. LMD reacted on this growing export potential with new interventions supportive to potato production: it established several seed funds held by farmer cooperatives, and promoted early potato production among farmers. With this, LMD could make use of the market demand although it was not able to influence it directly.

Product	Trade Indicators				
	Exported value 2012 (USD thousand)	Trade balance 2012 (USD thousand)	Annual growth in value, 2008-2012 (%)	Annual growth in quantity, 2008-2012 (%)	Ranking in world exports
Beans, peas	48 342		26	16	20
Potatoes	10 541		220	241	30
Fresh tomatoes	5 673		-20	-38	41
Cucumbers and gherkins	3 498		25	3	29
Cabbages and cauliflowers	2 569		25	39	36
Apricots, cherries, peaches, nectarines, plums & sloes, fresh	23 039		10	-9	26
Apples, pears and quinces, fresh	14 804		58	36	36
Nuts	7 478		-6	-7	51
Dried fruits	2 002		53	53	48
Jams, fruit jellies & marmalades	344	-575	71	13	89
Fruit & vegetable juices	189	-4507	-37	-31	134
Cucumbers, gherkins and onions preserved by vinegar	156	-482	5	2	80
Tomatoes prepared or preserved	139	-917	-29	-29	83

Table 2: Trade indicators for fresh and processed fruits and vegetables, exported by Kyrgyzstan (based on M-Vector: 2013)

6.2. Contributions to supporting functions

LMD supported the core functions of the market system via service providers and did not intervene directly. Accordingly, the project had to strengthen the financial and technical capacities of service providers in a way they were able to support the market system as described in the LMD's result chains. LMD worked mainly with two categories of supporting functions: the agricultural service providers and the associations. It marginally also supported input suppliers, finance institutions and consultants.

6.2.1. Support to agricultural services providers (SP)

LMD selected its partner organisations, the agricultural service providers, based on the previous experiences of ICCO and Helvetas: Before LMD set off, ICCO has implemented a range of projects through diverse NGOs throughout the country. In parallel, Helvetas founded the regional RAS centres in the frame of the Kyrgyz Swiss Advisory Service Project (KSAP). For LMD, ICCO and Helvetas decided to continue collaboration with ICCO supported NGOs as well as with the regional RAS centres.

Thanks to LMD's intervention logic and its long-term perspective, the project had a great interest to build capacities of its partners, and to strengthen their institutional capacities in a way they are able to provide requested services. In this regard, LMD offered continuous institutional support and capacity building to the selected NGOs and Rural Advisory Service (RAS) providers:

Annual planning workshops

In order to assess the needs for capacity building and institutional support, LMD organised annual planning workshops. There, SPs discussed intervention needs at farm level, and, based on this, they defined which support they will need for implementing these interventions. In the following, LMD organised trainings for SPs, the so-called training laboratories. These training laboratories lasted one to 10 days and were organised annually for all involved SPs until 2013. Usually, the project manager conducted the trainings, and sometimes, external experts were consulted. The training laboratories covered a broad range of topics, such as proposal writing, data analysis according to the needs of diverse stakeholders, economic analysis, negotiating and marketing services, contract farming, or business planning. Additionally, they included training on agricultural practices, such as bio pesticides, new inputs, farm economy etc.

Effects: LMD greatly enhanced the capacities of SPs and with this strengthened the potential of the SP to get mandated not only by ICCO and Helvetas, but by a range of donors. For many of these SP, the funds from LMD has relatively decreased compared to the funds they get from other donors, which proves the SPs capacities to acquire mandates.

Learning: When LMD set off, the selection of partners was not based on economic criteria, but on previous experiences and existing relationships. Thus, there was little competition among partners in the beginning. This changed with the introduction of the M4P approach, which led to the phasing out of several not well performing partners, and increased projects motivation to offer services at a competitive price. The history of the project however showed that it highly depends on the leader of an organisation whether they applied the business model suggested by the project. Capacity building and market oriented project approaches alone cannot change

Learning: Capacity development of service providers was a key achievement of LMD. In this regard, the training laboratories were a success story and led to fast enhancing capacities of the SPs. By striving to offer such capacity development via supporting functions, project can best ensure that trainings are available in the long run. Nevertheless, these supporting functions normally rely on public funds.

Interestingly, SPs see particular benefits of those training labs that were conducted by the project managers, and claim that the quality of the training labs decreased during the last phase. LMD did not succeed to facilitate other supporting actors, such as the Association of Service Providers or the Training, Advisory and Innovation Center (TAIC) to conduct these training laboratories in a qualitatively satisfying way. Probably the project focused too long on building capacities of service providers instead of strengthening an institution able to sustainably provide these trainings.

Trainings of trainers (ToT)

Between 2005 and 2013, LMD mandated the Centre of Training, Advisory and Innovations (TAIC), to train trainers of the diverse service providers on IPM methods.

The TAIC was established as a training institution for RAS providers in the frame of the former KSAP project. By mandating TAIC, LMD continued the former Helvetas support to this training institution, which is a relevant supporting function to the market system. Based on LMD and former KSAP support, TAIC was able to considerably enhance the availability of IPM trainers in the country: TAIC trained 47 IPM consultants in the frame of LMD, and 175 IPM trainers in total. While a part of these trainers are still working as consultants in diverse SPs, a considerable part of these trainers are either pensioners or migrated to Russia. This one of the reasons, why SPs still claim a need for training of new trainers or for further education of former trainers.

Learning: Direct (= through the project) capacity development of trainers and SPs is the most efficient way to build capacities in the short run, while investments into **institutionalisation of capacity** development may appear less effective. Nevertheless, if a project has the possibility to invest into institutionalisation of capacity development, such investment serves partners' long-term need for training better than direct capacity development.

Despite the support of LMD, TAIC could not maintain its position as a training institution. It saw greater benefit in providing trainings directly to farmers, not at least due to donors mandating TAIC for such services. LMD went with this trend and started to mandate TAIC for training provision to farmers instead of providing ToT. In parallel, LMD started to directly support SPs in building capacities of (new) trainers via external consultants: In 2014 and 2015, LMD financed a training programme for young professionals that is offered by RAS Jalalabad and Mekhr Shavkat. In total, 50 young agricultural consultants, and specialists in greenhouse production have been trained. These young specialists are now ready to work in any SP organisation and provide services to farmers.

While LMD initially strengthened TAIC as a service provider institution, it more and more neglected this contribution, and instead started to directly support SPs in capacity development activities. This might have had economic and quality reasons, but is not aligned with a MSD approach striving to strengthening support functions.

Besides the capacity building via TAIC, LMD invited external consultants to build agricultural capacities of service providers: E.g. in 2006, the IPM consultant Mr. Madhu Sudan Paudyal from Nepal conducted 18 two days ToTs, and in another year, a Dutch student with specialisation in IPM pest management collaborated closely with SPs in the South.

Effects: For many years, LMD strengthened the function of TAIC as a central training institution for trainers and trained through TAIC many of the IPM consultants available in the country. With its shift away from institutional support to TAIC, it did – as many other donors – not contribute to the availability of a training institution for trainers in the country. Although this might have had its reasons with regard to the quality and effectiveness of the trainings, LMD did finally not contribute to the institutionalisation of long term capacity development for service providers. This affects sustainability of its LMDs capacity building efforts.

Association of service providers AGROCONSULTING

In 2010, service providers expressed the need of being associated on a higher level. They expected to benefit from such an association through trainings and information, promotion of services, and coordination between relevant stakeholders. Since the foundation of such association fit well into the MSD approach of LMD, the project started to financially support such an association in April 2010. The name was Agroconsulting. Originally, LMD expected that after some support, Agroconsulting will be partly financed by membership fees, partly by other (ODA) initiatives.

Agroconsulting was expected to perform the following activities:

- Coordination of the Agroplatforms
- Conducting needs assessment for training laboratories
- Facilitating capacity development for service providers
- Advocacy for RAS at regional and national level

The association, however, did not developed as expected and after four years, in 2014 it had no members anymore:

Year	Members
2010	Seven LMD SPs from southern Kyrgyzstan became member of Agroconsulting
2011	On new member joint: the NGO Bio Service, which was associated with Helvetas in the frame of the Bio Cotton project.
2012	No changes in members
2013	NGO Tayan closed and thus left the association; RAS Batken and Agrobilim payed their membership fees only partly and with delay; Mekhr Shavkat did not see any use of the association and left it. Helvetas financially supported the association until mid-2013.
2014	All remaining members left the association

The following aspects led to this development:

- According to SPs and the association, Agroconsulting could not meet the expectations of the RAS stakeholders: Regarding the Agroplatforms, market stakeholders claim that there were only few new topics and the Agroconsulting could not add additional inputs. As a result, less and less stakeholders participated at the Agroplatforms. Since Agroplatforms were a success in the beginning, the decrease of stakeholders was attributed to low quality of the association.
- Another fact, leading to decreasing number of members, was that the Training Labs were not a considered a service of Agroconsulting: Training Labs were fully financed by LMD, and thus all LMD partners, including those that were not members of Agroconsulting, were invited to participate. None of the members did pay a fee for the Training Labs. As a result, the association could neither generate a value added for service providers (since this was attributed to the project and existed already before the foundation of the association) nor generate an additional income with the Training Lab. This is a typical crowding out, driven by the project, which should have been avoided.
- SPs expected from the association that it lobbied for a conducive environment and public funds for agricultural service provision. In this regards, the location of Agroconsulting constrained the association's impact: The association was based in the South, while all relevant decisions

Learning: Projects should carefully avoid unforeseen crowding out of actors. By supporting non-members of Agroconsulting to use services that were originally offered only to members, LMD undermined Agroconsulting's membership rules and thus its members' motivation to stay with the association.

regarding to national agricultural extension re taken in the North. LMD proposed to move the seat to the North, but for representative reasons, the SPs did not agree

- Besides, Agroconsulting experienced a similar history as TAIC: it became more and more a service provider for farmers instead of working for the SPs. It acquired the same projects as the SPs, e.g. distributions of seeds after the revolution, or facilitating the maintenance of irrigation channels. With this, the role of Agroconsulting shifted from a supporting institution to a competitor of SPs, which was observed critically by the SPs.

These are the reasons, why the SPs looked at the association more and more critically and started to complain about high membership fees compared to relatively little use. Also LMD observed the association's delivery critically and in 2013, communicated conditions for providing further financial support to the association. These requirements were not met until mid-2013, and consequently LMD phased out its support.

Learning: The idea of supporting such association is fully aligned with the MSD approach, in particular when the request come from SPs. The trade-off between intervening as a project and supporting others to take over this task becomes here particularly evident. Probably the foundation of such association would have required more project investment and particularly steering. Looking back, one can say, that the location of the association was not correctly chosen by the service providers, while capacity development of staff or possibly selection of staff did not satisfy the requirements. Against this drawback, handing over such crucial project interventions, such as the training lab or the Agoplatform was a courageous step of LMD towards a more market based approach. Unfortunately it was not accompanied with sufficient project guidance, which would have been necessary for reaching the expected results. Although one could see this intervention as a failure, it should be considered that such trials and errors are necessary for projects taking the MSD approach serious.

Coordination of IPM SPs

Not all trainers that got trainings from TAIC were associated to SPs. Some of them worked individually on a consultancy basis. In order to enhance their coordination, LMD supported the foundation of an IPM trainer network that was facilitated by the NGO Agobillim. In 2011, 30 IPM trainers offered their services via the network, and together they sold services of total 1,7 million KGS (26 150 euro) to external clients, mainly development organisations. This network has not been strengthened continuously and today, none of the IPM service providers gets access to mandates through the network.

Learning: Networks of individual service providers are crucial for them to sell their services. In order to function sustainably, such networks must be well institutionalised, best within an existing organisation that provides a solid framework for coordination unit.

6.2.2. Support to associations

LMD supported two associations with different results: the AFVPE (see chapter 6.1.2), which was already founded before LMD, and the new association of service providers Agroconsulting (see chapter 6.2.1). As described in the chapters above, today, AFVPE effectively acquires donor funds for their advocacy activities and services for processing enterprises, while Agroconsulting has no members anymore and cannot implement any activities. Looking at this, one may ask what role LMD played and how this role influenced the success of the associations.

- **Perceived role:** At the beginning, LMD decided to support processing agencies exclusively via AFVPE. In contrast, the support to SPs was first delivered by the project and then partly through Agroconsulting. The importance of the two associations for LMD were thus considerably different.
- **Guidance from the project:** While LMD fully relied on the AFVPE when it came to the support to processing agencies, LMD somehow artificially and only partly involved Agroconsulting in project implementation in the third phase. All services of Agroconsulting were before conducted by the project, so the association had a hard time to show the same quality to its members.
- **Location and membership policy:** There is a parallelism between the advocacy success and the location and membership policies of the association. AFVPE aimed to include members from all over the country and was situated in the capital, while Agroconsulting limited access to members from southern Kyrgyzstan, and was located decentralised, in Osh. AFVPE claims that the number of members is a success factor for acquiring mandates, while Agroconsulting explains its limited outcome on policy level with the fact that it was situated far away from policy decisions.

Learning: The handing over of project activities to a newly established institution requires close guidance and support of the project. To avoid risks through such handing over processes, projects should strive to work via partners (service providers, private companies, etc.) already from the beginning.

Learning: A high number of members and a seat close to policy decisions positively influences the functioning of associations. Membership policies and project guidance have a considerable influence on these factors.

6.2.3. Support to agro input supply markets

LMD aimed at stimulating collaboration between input suppliers, farmers, and SPs. LMD therefore did not provide any direct support to input suppliers or their network in order to enhance availability of inputs for farmers. Instead, it supported SPs to provide embedded service, which were considered key for the SPs to reach financial sustainability. That is why, LMD worked almost exclusively with SPs and facilitated them to provide this combination of inputs and consultancies.

In 2013, LMD mandated the association of input suppliers to conduct a study on the agro-input market in Kyrgyzstan. This made evident that larger inputs suppliers provide in average 10% discount on normal sales prices, for the sales of bigger on volumes. So, if service providers charge 5% commission, farmers still access inputs to a lower price. Depending on the relationships/trust and the availability of collaterals the input suppliers are ready to provide 50-100% prepayment of these inputs – an offer, which helps farmers as well as SPs to access inputs without taking expensive loans. The study also shows that they only sell 50% of their inputs directly to farmers, the remaining 50% are sold either through dealers (including SPs) or shops (Annual report: 2013).

With the decision to enhance access of farmers to agricultural inputs via SPs, LMD contributed to the fact that SPs more and more became value chain actors instead of value chain facilitators. Nevertheless, a look at the income of service providers confirms the relevance of embedded services only partly. Incomes from trading and processing companies remained besides donor finances (80-100%) service providers' major income. Interestingly, LMD measured this information only since

Learning: Rules and regulations are particularly important support functions in agro input supply markets. They are prone to quality issues and often informally organised. Respective policy interventions, can enhance a project impact considerably, in particular for non-project farmers-which remain the majority.

2009. Before, LMD focused exclusively on farmers' income:

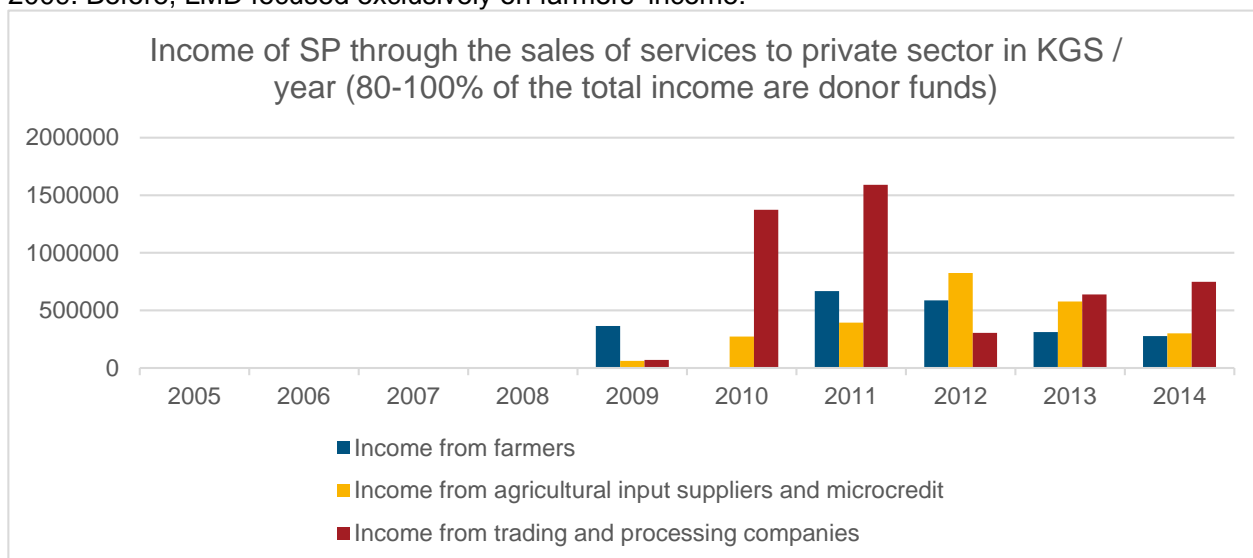


Chart 12: Income of service providers through the sales of services to private sector (based on Dischl (2012) and project reports 2009-2014)

Effects: All interviewed farmers claim that they have sufficient access to the required inputs either through the service provider, the processing agency, or via an input shop. There are variations in the conditions of input purchase: Normally, farmers have more trust in SPs input supply than the inputs of the processors. They sometimes claim that if the processors is the only source of inputs, there are problems related to their monopoly position. Some processors as well as the SPs prefinance inputs without collaterals and free of interest. This is most appreciated by farmers. Yet, however, only TES center, Agrolead, and RAS Jalalabad maintain such contracts with input suppliers, while the other organisations maximally link farmers to existing input suppliers (Annual Report 2014; Interviews). A limitation of LMD’s contribution is that they neither included the development of the overall input sector, nor quality assurance of inputs. These aspects are particularly important for farmers that access inputs from others then SP, thus the majority. With an intervention on a higher (policy) level of the input market, LMD would have had a larger impact than it had by securing input supply to LMD farmers “only”. Nevertheless, the below graph shows that import of seeds and thus probably access to seed for farmers considerably increased between 2010 and 2012.

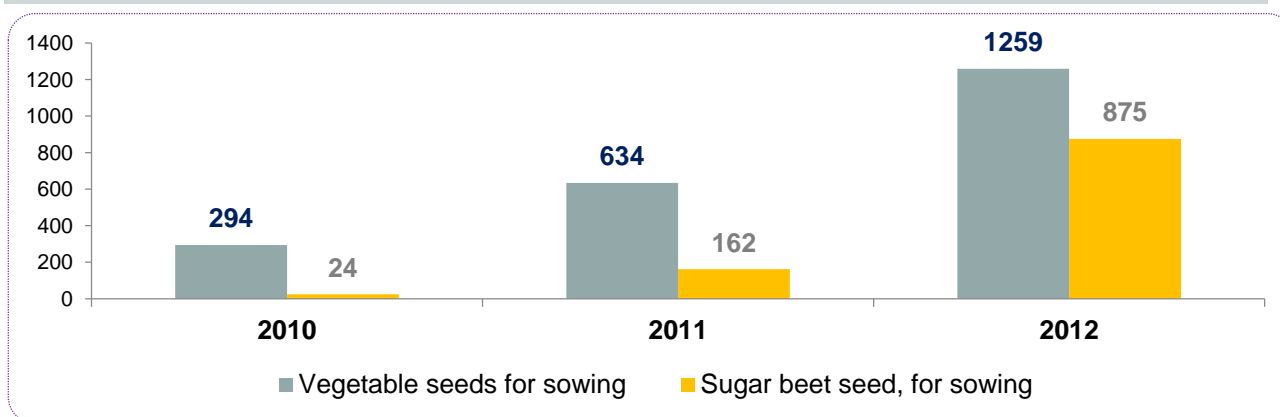


Chart 13: Value of vegetable seeds, imported to Kyrgyzstan, 2010-2012 (USD thousand) (Source: M-Vector: 2013)

6.2.4. Support to agro finance organisations

Agro finance organisations have been addressed in a similar way as agro input suppliers: indirectly via SPs. While in the beginning, the SPs could rely only on few microcredit organisations, mainly such that they have established themselves with donor support, the number of private micro credit institutions offering individual and group credits to farmers enhanced in the course of project implementation. LMD's most relevant contribution to the finance sector is probably the promotion of the idea of group or later individual credits with SPs as brokers. The missing trust between farmers and micro finance institutions can be addressed with SPs that on the one hand support farmer groups in business planning, and, on the other hand, contribute to the putting in action of the business plans through input supply and consultancies.

Effects: None of the interviewed farmer groups claim any problem to access finances. But, none uses loans from microfinance institutions for agricultural activities, since these are either too expensive compared to the agricultural inputs, or, the producers get pre-financing of inputs from SPs and processors. Most farmers, however, irregularly take loans for family celebrations or household investments.

LMD via AFVPE supported the availability of suitable value chain finances for traders and processors (see chapter 6.1.2). Still, most market actors claim that value chain finances are the most constraining factor. As written before, it is not clear, whether this indicates a lack of finance offers or rather a reluctance of value chain actors to assume market risks associated with loans and fluctuating market prices..

6.2.5. Support to consultants

LMD mandated consultants either directly or via the AFVPE for conducting a range of studies and assessments. It did not actively contribute to capacity development of these consultancy companies in order to enhance their services.

There is one exemption: The support to "AgroinformAsia" – an operator that collects information on market development and farm activities, and shares it with any interested party on its webpage or via mobile applications. AgroinformAsia was founded in 2007 under the AFVPE. The company received institutional support as well as diverse mandates, among which the development of the Agricultural Market Information System (AIMS; www.agro-asia.com) is the most important. The need for an AIMS for whatsoever product or service was very prominent among many local organisation at that time. Stakeholders were convinced that by having such a system, the problem of match-making would be solved. The institutional support to AgroInformAsia has to be seen in this context.

Whether the assumption was correct or not, the idea was taken over by the fast development of the mobile and internet services. AIMS provided any stakeholder the opportunity to enter update relevant information into the system via internet, apps or SMS. AIMS included information on local agricultural materials, current market prices for about 20 fresh produce items, for processed agricultural produce, agricultural inputs, advisory services, etc. Further, the website included

- 1) A map showing the location of farmers and processors in Kyrgyzstan, related contact and commercial information.
- 2) An electronic directory for research of purchase and sales option. This information was also available by sms.
- 3) An electronic library with various studies, books and analytical information related to agriculture and agribusiness.

Effects: The sales of the sms services to farmers remained project dependent: In 2007, 351 sms were sold, while in 2008, the amount of sold sms services accounted for 1000 USD, all of it paid by development actors. About 100 visitors a month visited the homepage between 2008 and 2012 (Annual report 2007 and 2008, 2012). In order to enhance the sales of the product, LMD supported

diverse promotion activities, including a poster at the freshmarket in Bishkek. But, service demand did not enhance and LMD concluded that they are either not demanded or not of sufficient quality. It therefore phased out support to AIMS and AgrolInformAsia in 2013. One need to note that this was the year when LMD got a new project manager.

Despite this decision of LMD, AgrolInformAsia is today offering information services under the lead of the former project manager, the father of the AgrolInform founder. According to the manager, the company is successful in acquiring donor funds for the services and in selling the services to interested institutions – mainly development actors.

Besides the support to AIMS, AgrolInform was mandated to elaborate a similar service in the frame of LMD Tajikistan. SAS consulting (today Neksigol) offers this service successfully until today.

6.3. Contributions to rules and regulations

LMD contributed to rules and regulations via the AFVPE, which was mandated for advocacy work. This resulted in improved tax conditions for agricultural processors, as described in chapter 6.1.2.

Effects: Some significant challenges for the market system of processed fruits and vegetables have not and probably could not have been addressed by LMD. So leads the weak right enforcement to insecure market transactions and investments, and contracts often remain a paper document without binding character. Quality standards for agricultural inputs and outputs are yet not reflected sufficiently in rules and regulations. This renders access to markets in particularly to European markets difficult, and farmers – if not integrated in any development programme – face problems concerning the quality uncontrolled agricultural inputs.

7. Effects of the interventions at farm level



Photo 5: Farmer group in Issyk-kul region (Stefanie Kaegi: 2015)

The following figure depicts the number of farmers that directly benefited from LMD support at farm level. Between 2005 and 2015, LMD facilitated and financed services to approx. 8954 farmers. In average, these farmers got support for 2.8 years, which means that during this time, they used services from SPs that were subsidised to a major part by LMD.

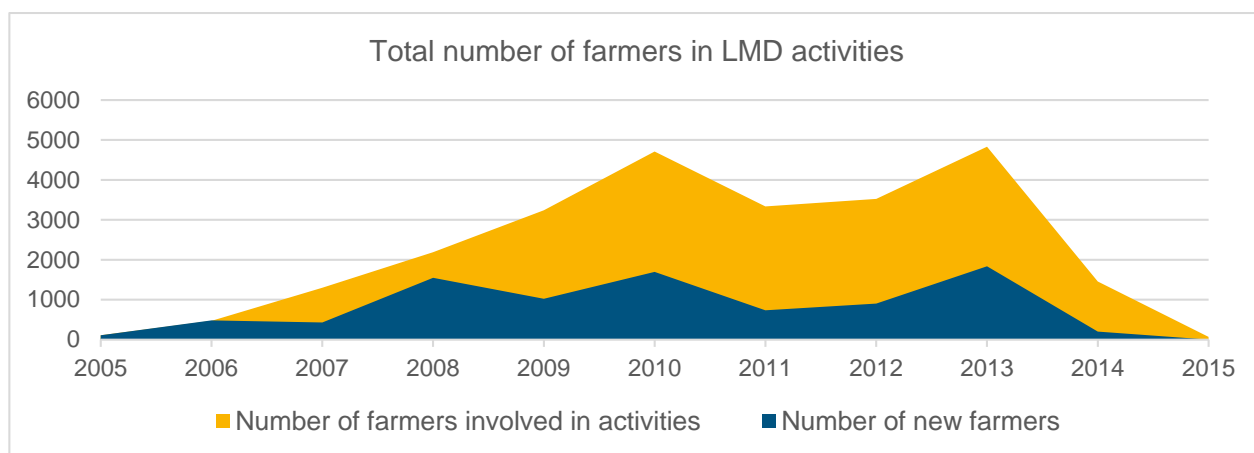


Chart 14: Number of new farmers and number of total farmers involved in LMD activities. Data bases on project reports 2005-2015.

Through the combined support at producers and processor level, LMD could reach considerable change at farm level. This change has been assessed in the frame of the interviews with farmer groups conducted by the author of the study during the mission. In addition to this, the project mandated the consultancy company m-vector to conduct a final impact assessment of LMD. The assessment bases on interviews with in total 340 LMD beneficiaries from all phases, and 112 control group farmers living in the neighbourhood of the LMD beneficiaries. All details about the methodology of the study are described in the study (M-Vector: 2015).

The LMD beneficiaries state that they benefited from increased knowledge, better access to input and output markets, and increased income (M-vector: 2015). A look at the control group's indication shows that LMD farmers have clearly more improved their knowledge in agriculture and their access to input and output markets, as well as to agricultural finances. The following subchapters provide details on each of these benefits.

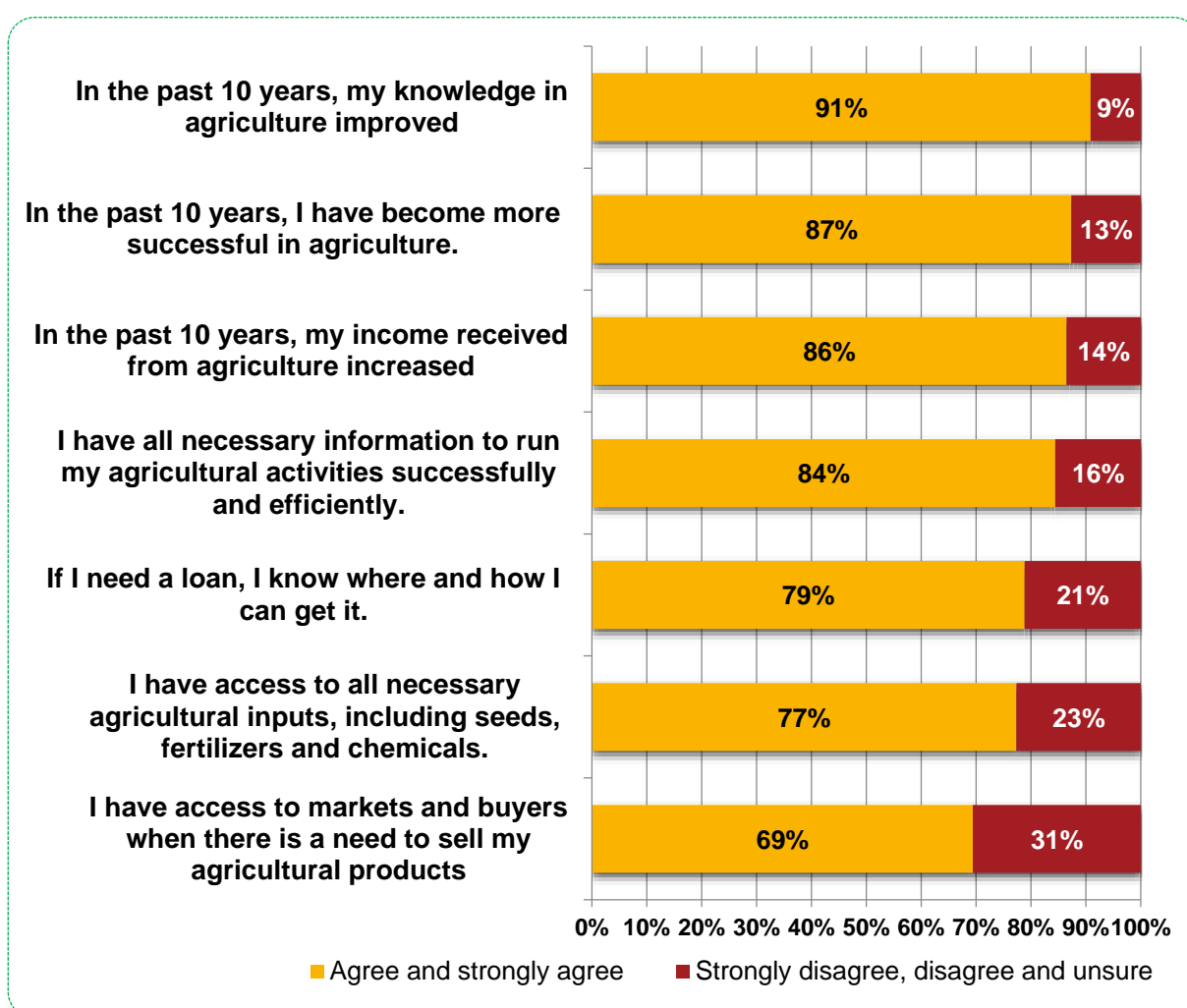


Chart 15: Evaluation of a few statements related to success in agriculture by beneficiary farmers, n=340 (M-Vector: 2015)

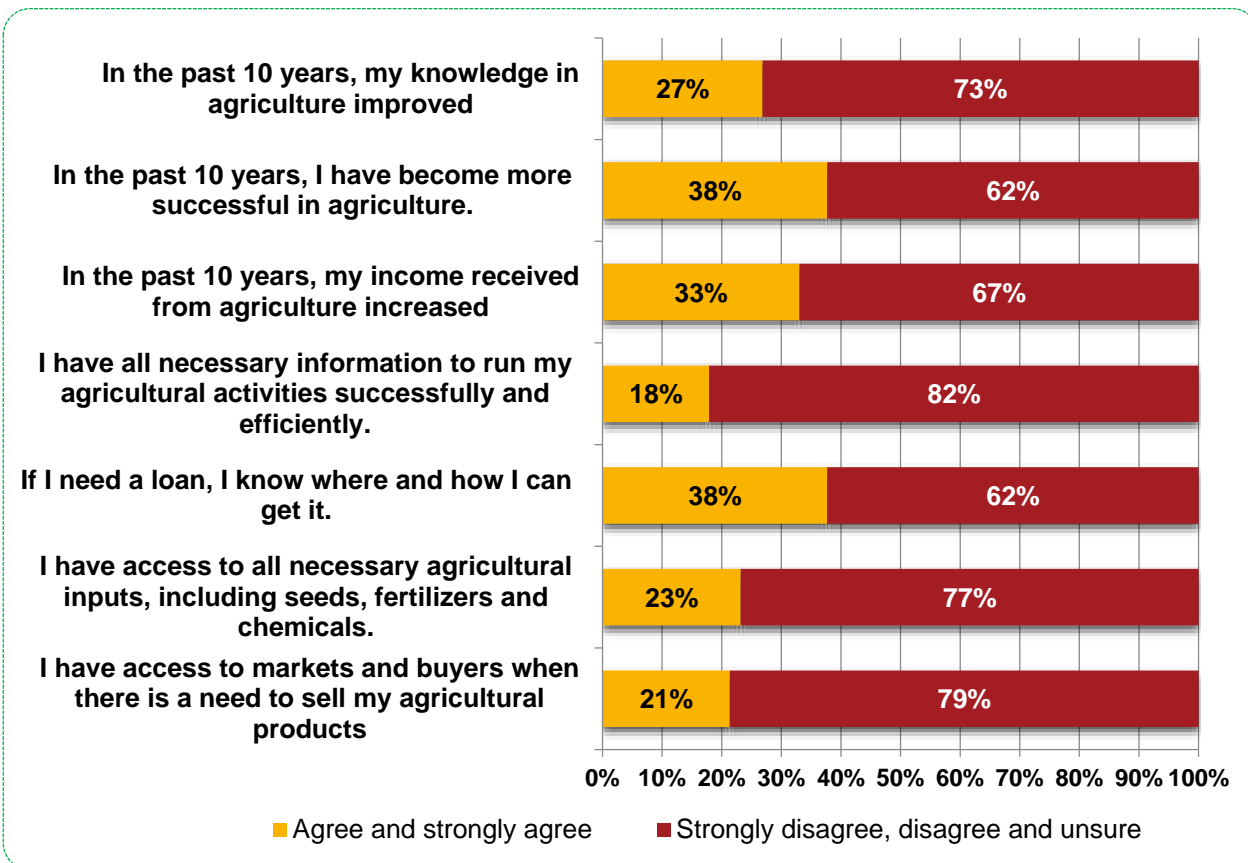


Chart 16: Evaluation of a few statements related to success in agriculture by farmers from the control group, n=112 (M-Vector: 2015)

The impact of the programme on women and men farmers seem to be more or less balanced: Men and women has equally applied the promoted new technologies, while men (78%) did it with slightly more success than women (72%).

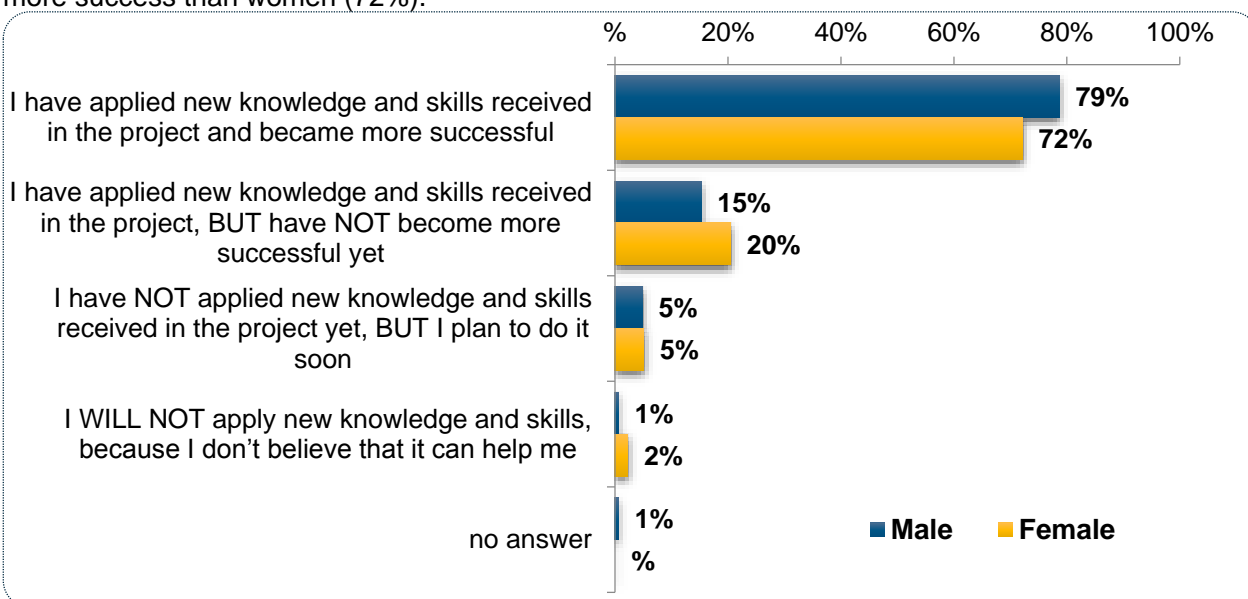
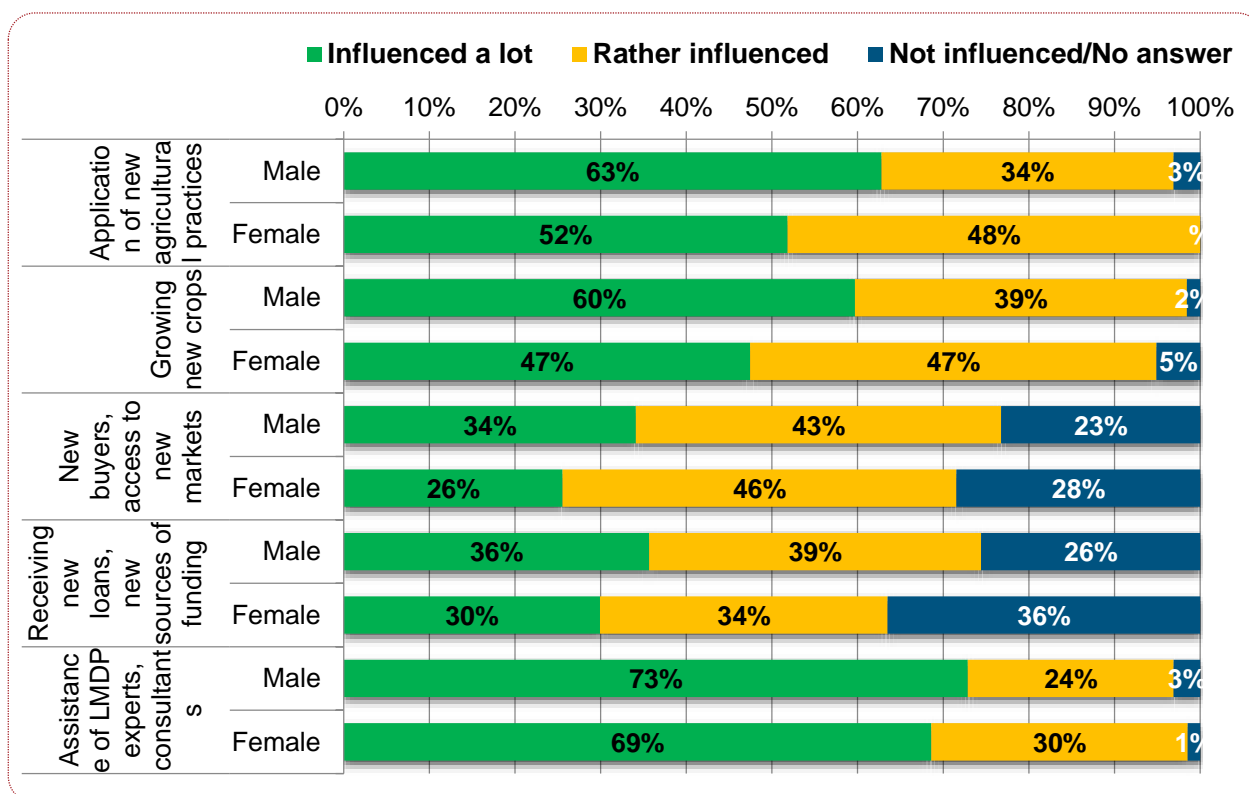
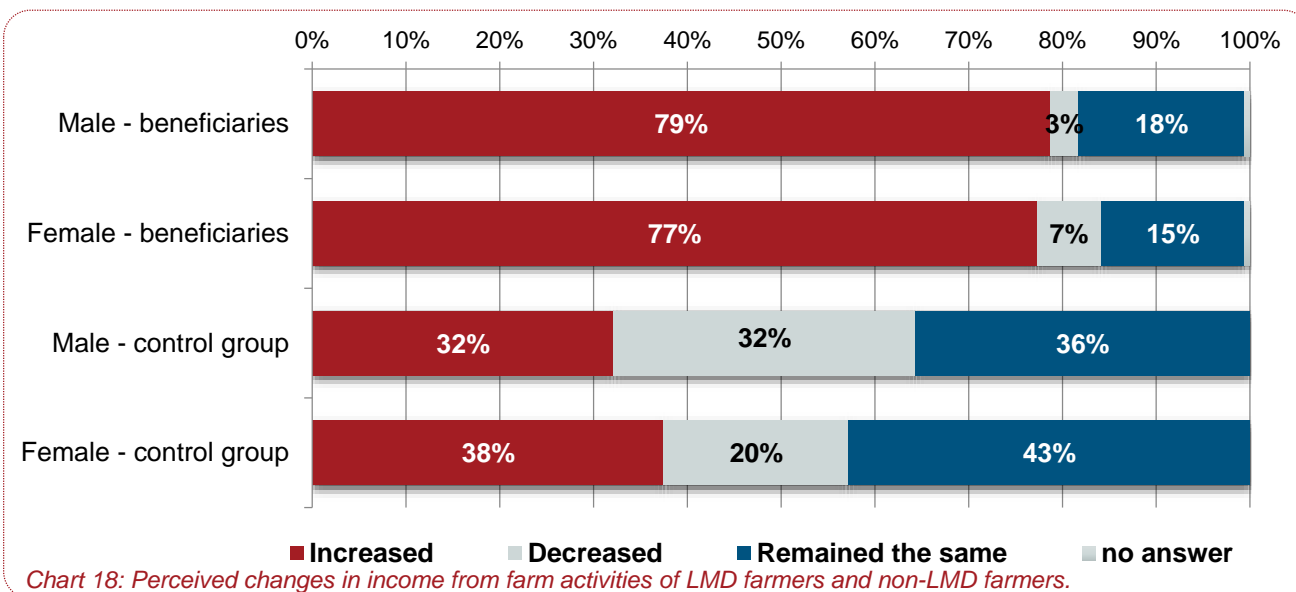


Chart 17: Application of new technologies by LMD man and women farmers (M-Vector: 2015)

Impact on income

Looking at incomes, 78% of the LMD farmers claim that they have increased their farm income, compared to only 35% of non-LMD farmers. As shown in the figures below, the interviewed farmers attribute this positive income change mainly to the assistance of experts and consultants, to the application of new agricultural practice, and to the shift towards new crops, mainly vegetables. In general, men farmers attribute higher impact to each of the influencing aspects than women farmer do.



Change of produced crop

Most of the interviewed LMD farmers state, that have changed the crop they produce: they changed from wheat or tobacco, to vegetables, early potatoes/vegetables, or berries. This signifies a change from low input crops with a low-income potential to crops requiring more inputs, but generating a higher income. Farmers claim that they only dared doing this change because LMD helped them to secure sales channels.

Interestingly, although some of these farmers do not anymore sell to processors, but on local bazars, they stick to the “new” crops, because they have experienced the higher profitability of these crops. This does not apply for farmer groups that are located far away from central bazars, and thus fully depend on processors’ demand. In case that there is no demand of processors or traders, respectively when a company has closed, farmers changed back to former low profit crops (e.g. farmers of RAS Jalalabad that were involved in a tomato value chain, but now again produce maize) As shown in chapter 6.1.2, total food processing markets has grown in the last ten years. There is, however, no evidence to attribute this to the LMD intervention. LMD has linked farmers to new market channels, wherever this was possible. Where processors closed, or decrease their production, LMD could/did not intervene. Thus, sales of farmers’ produce fully depend on the overall market situation of a processor or region. (Source: Interviews during author’s mission; 2015)

Learning: Since LMD did not influence upward linkages of processors and traders, value chains were prone to changes at processor level or national markets. LMD did not develop a means to address the risk of disappearing markets.

Change of production methods

1) Farmers have changed the way of production: Although some farmers do not remember the exact training content, all interviewed farmers claim that they benefitted from the knowledge of the service providers. They consider the following training content as particularly enriching:

- how to produce selected crops in a more efficient way
- how to select an produce new crop varieties
- how to produce new crops (mainly vegetables), seedlings, or early crops (potatoes and cabbage)

Learning: With growing input markets, farmers face a fast changing offer of seed varieties, and have comparably little knowledge and experiences to decide about their quality. Providing information on seeds or demonstrating diverse varieties on selected plots, are highly appreciated services.

Through SPs, farmers got access to seed, knowledge, and required production inputs, which they consider a key element for the production changes. The impact assessment reflects these statements and shows that the use of organic fertilisers, improved seed quality, pest management and soil fertility management are among the most applied improved practices of LMD farmers:

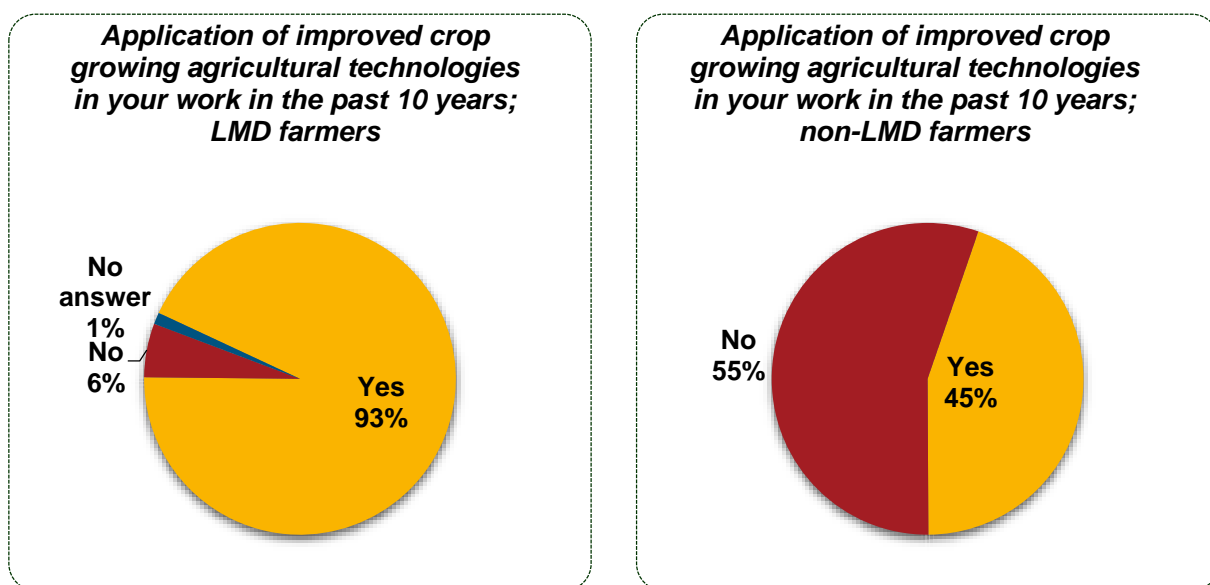


Chart 20: Application of improved crop growing agricultural technologies in your work in the past 10 years

#	Improved practices	Beneficiaries		Control group	
		Male	Female	Male	Female
1	Use of organic and micronutrient fertilizers	79%	80%	24%	36%
2	Improved seed quality, utilization of better seeds	71%	74%	44%	32%
3	Pest and disease management	74%	66%	48%	32%
4	Soil fertility management	68%	56%	16%	24%
5	Weed control	58%	39%	32%	44%
6	Crop rotation technology	49%	45%	16%	4%
7	Introduction of new crops	52%	43%	36%	32%
8	Proper harvesting and storage	32%	30%	4%	4%
9	Irrigation management, drip irrigation	22%	26%	4%	4%
10	Fruit tree management	17%	9%	24%	12%
11	Improved marketing and sales tools	6%	12%	-	-
12	Crop economic analysis	7%	6%	-	-
13	Improved methods of on farm drying of fruits	3%	1%	-	-

Table 3: Major improved agricultural practices applied (M-Vector: 2015)

Among LMD farmers, there are different opinions regarding the application of chemicals: Some farmer groups learned in IPM trainings how to apply homemade, natural inputs, and are convinced about the positive effects of IPM methods on health, soils, and household budget. Others claim that the new varieties require more and more chemicals and production costs significantly increased since they changed their way of production. Some even claim that they are afraid to get into debt because of high production costs and considerably deep prices e.g. for early vegetables in spring 2015. They fear that they cannot continue using such expensive inputs with continuously decreasing crop prices.

Learning: Trainings on ecological agriculture without generating higher prices (premiums) for ecological products are hardly financially viable for service providers. Such trainings will be shortened to a minimum as soon as they have to be financed by market actors.

This is an indication for the importance full IPM training cycles that help farmers to reduce production costs. As discussed in chapter 6.1.1, these training cycles have not shown financially viable for SPs (see Annual report 2013), and they have been more and more shortened since 2012 in favour of SP's financial sustainability. This is one of the drawback of the strong orientation on financial viability of services.

Establishment of new market linkages

64% of interviewed LMD farmers report that they have established new linkages with market actors in the past years, compared to only 29% of non-LMD farmers. This is an obvious result of the broker activity of SP that was mainly financed by the LMD project, and partly by the processors.

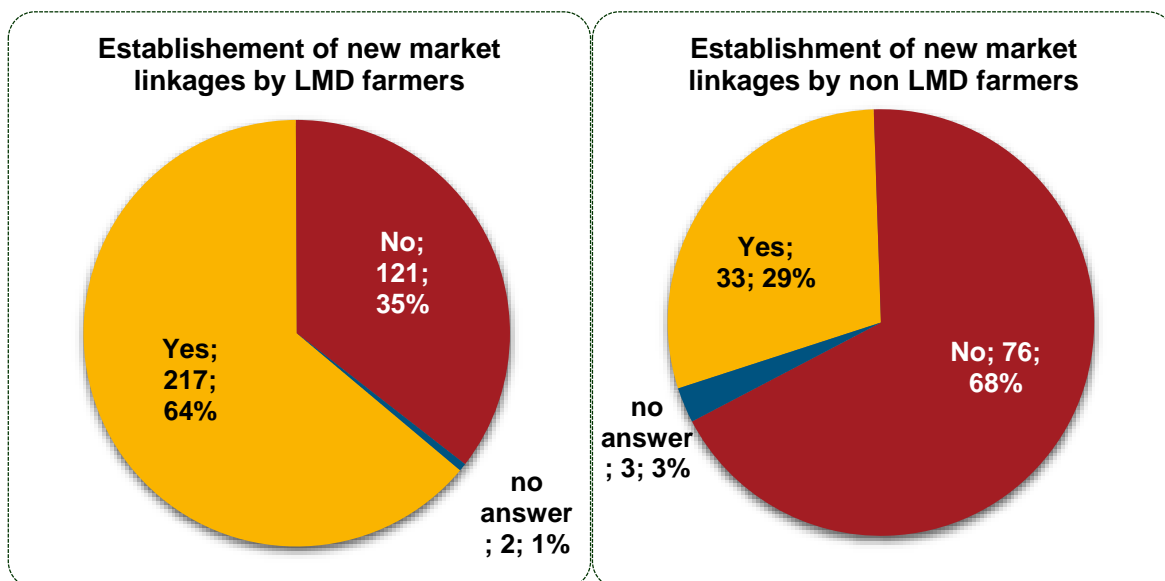


Chart 21: Share of LMD and non LMD farmers that established new market linkages in the last 10 years (M-Vector: 2015)

	Beneficiaries (n=217)		Control group (n=33)	
	N of farmers	%	N of farmers	%
Merchants, intermediaries	180	83%	31	94%
Retail consumers	168	77%	24	73%
Processing plants	82	38%	1	3%
Foreign buyers	14	6%	1	3%
State buyers¹	10	5%	-	-
Other buyers	6	3%	-	-

Table 4: Buyers with whom LMD farmers and control group farmers established linkages in the past 10 years (M-Vector: 2015)

Access to loans

There is no significant difference in taking loans between LMD farmers (43% took a loan in 2015) and the control group (40% took a loan in 2015). The difference lies rather in the sex of the interviewed farmers: 40% of LMD women farmers took loans, compared to 49% of LMD men farmers. And 47% women of the control group took loans, compared to 35% man of the control group.

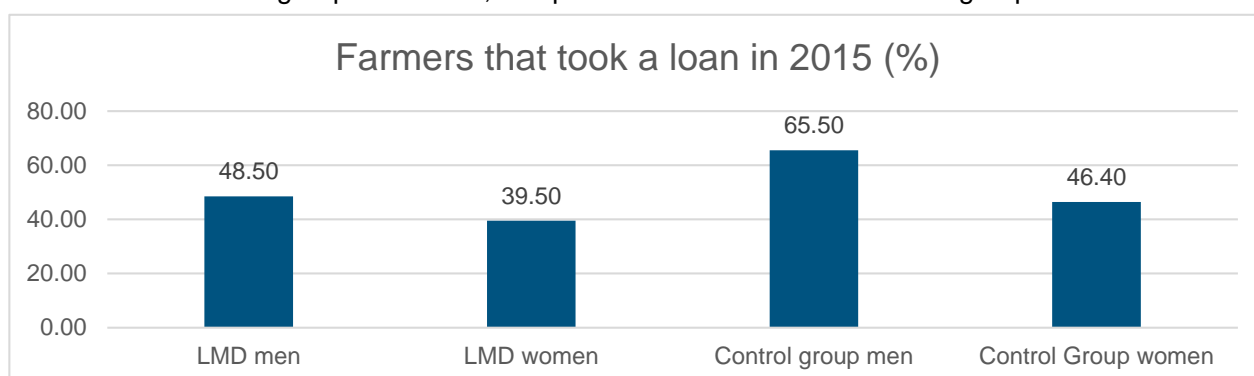


Chart 22: Share of farmers that took a loan in 2015 (M-Vector: 2015)

For the respondents of both groups, banks and micro-finance organizations prevailed the main source of funding. Both groups use loans mainly for working capital, while 18% of LMD farmers use loans also for the procurement of cattle/livestock compared to only 5% of the control group farmers. This might be, but not necessarily is, due to the higher use of organic fertilizers of LMD farmers.

¹ State buyers include organisations and institutions, funded from the state budget, which make procurement of different goods normally based on a tender (such as Health Ministry/hospitals, Ministry of Defence/army, state secondary schools and kindergartens, etc.)

Beneficiaries	Control group
<ul style="list-style-type: none"> • Working capital – 50%; 	<ul style="list-style-type: none"> • Working capital – 50%
<ul style="list-style-type: none"> • Procurement of cattle/livestock – 18%; 	<ul style="list-style-type: none"> • Construction – 16%
<ul style="list-style-type: none"> • Construction – 8%; 	<ul style="list-style-type: none"> • For crop growing – 11%
<ul style="list-style-type: none"> • Seeds – 8%; 	<ul style="list-style-type: none"> • Purchase of machinery, equipment – 7%
<ul style="list-style-type: none"> • Fuel – 6%; 	<ul style="list-style-type: none"> • Fertilizers – 5%
<ul style="list-style-type: none"> • Fertilizers – 6%; 	<ul style="list-style-type: none"> • Procurement of cattle – 5%
<ul style="list-style-type: none"> • Purchase of machinery, equipment – 4%; 	<ul style="list-style-type: none"> • Machinery repair – 2%
<ul style="list-style-type: none"> • Spring sowing/works – 4%. 	<ul style="list-style-type: none"> • Procurement of new potato varieties – 2%

Table 5: Use of credit money by LMD farmers and the control group (M-Vector: 2015)

8. Overall achievements: LMD’s support to the market system change

The below tables describes the project’s effects on the three major market actors by providing information about the aspects mentioned in the below table.

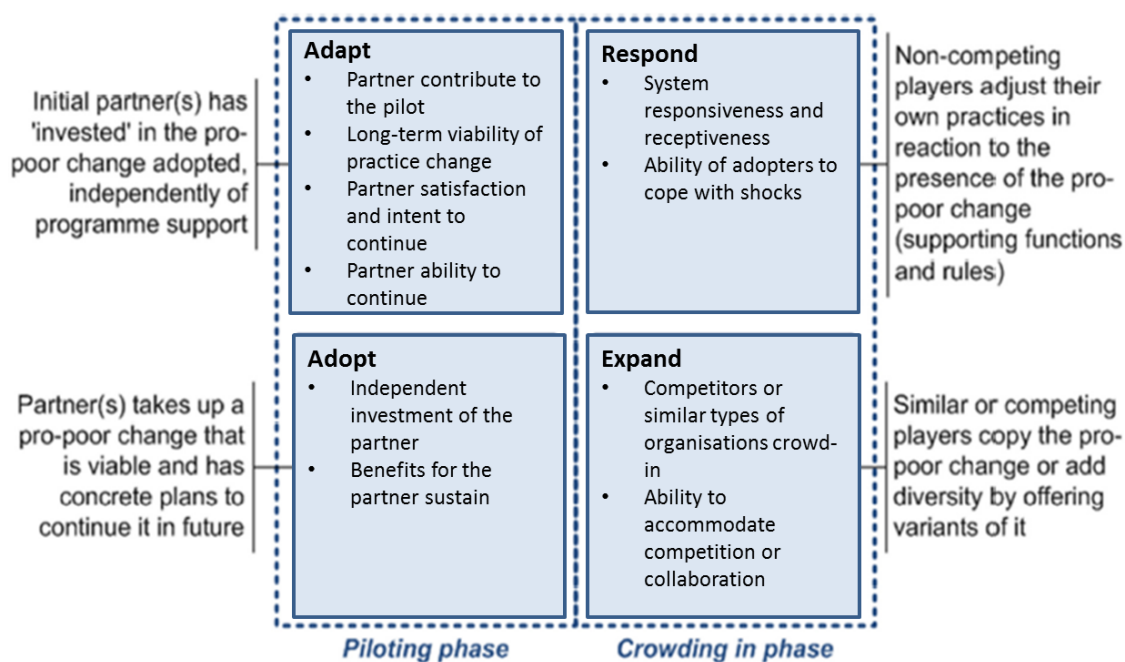


Figure 8: Market system development analysis framework (adapted by Stefanie Kaegi; Nippard et al. 2014)

8.1. Market system change: Agricultural producers

Promoted market approach: Producers increase their income through 1) an adaptation of their production to the demand of processors and traders, as well as through enhanced production systems and access to inputs and finances.

Adapt

Farmer groups have been built; they participate in trainings and meetings with value chain actors.

Where ever this was possible, farmer groups have established relationships with P/T and sell part of their products.

The satisfaction of farmer groups depends on the market prices and on the sales condition. This differs by P/T.

Farmer groups are able to continue the relationship with P/T if market transactions have functioned well during LMD and if farmers groups are easily accessible by the P/T. Depending on quantity of supply, the demand of processors are limited and LMD farmer groups compete with other farmers.

Respond

There are contradicting indications about self-built farmer groups: some claim that they have “all” been established in the frame of development projects, while other indicate that there are self-built farmer groups that are based on broader family structures.

The author has not met replications of the group approach without support of projects.

Adopt

The majority of the farmer groups don't invest into services of service providers, but many continue what they have learned during the project time.

Many farmers produce today a different crop than before LMD. Based on this one may assume that the benefits of producing this crop sustain.

Expand

Some farmer cooperatives have been built on the demand of farmer groups. Farmers have organised these cooperatives and asked for support from SPs, respectively from donors.

Some processors aim at establishing their own fields and hire agricultural workers. This could be seen as competitors; however, none of the farmer groups has mentioned this.

8.2. Market system change: Processers and Traders (P/T)

<p>Promoted market approach: Processors and traders buy agricultural products from farmer groups that has not worked with the concerned company before. The P/C plan production jointly with the producers in advance, and pay a commission to the services providers for the facilitation of production and delivery.</p>	
<p>Adapt</p> <p>In total around 20 P/T have been involved in project activities and bought products from farmers.</p> <p>Some of them see a long term viability and plan to use the approach in the long run. Some of them have closed, or not increased demand for involving more farmers.</p> <p>With the growing vegetable and fruit production in the country, P/T have no problem to assess sufficient quantity of products. They don't rely so much on the linking function of SPs, as some years ago.</p>	<p>Respond</p> <p>In tendency the number of intermediaries between producer groups or cooperatives and P/T increases. While in some areas P/T have ceased their activities, in other areas, e.g. Bishkek, the sector is growing. These intermediaries directly link with farmer groups that have been established by SPs. They don't use the services of the SPs.</p>
<p>Adopt</p> <p>Some of the P/T services and already now elaborate agreements and provide prefinancing to farmers independently of the project.</p> <p>Some pay SPs for the linking and training services, but most don't, since they miss that SPs formally assure quality and quantity of products.</p> <p>Processors tend to say that they will less and less use the services of the SP. They can organise and contact farmers directly.</p> <p>They would pay and mandate SP if they would secure a predefined supply of produce. SPs are not ready for this.</p>	<p>Expand</p> <p>In general, the processing and exporting market sector is expanding (see tables below) and thus competitors have evolved. Some among them replicate the SP approach for securing their own supply, e.g. the brand Ekfrut is working with the Contracting Centre, a SP that ensures and organises supply and the company OKSA employs SPs to secure supply of fresh berries. Both were not involved in LMD but use the same approach now.</p> <p>Several other approaches to secure product supply have evolved in recent years: In 2011, 11% of the processors have established their own production base, while in 2012, this has already increased to 19%.²</p> <p>Another approach is to work directly with farmer cooperatives. While SPs support the establishment of the cooperatives, the cooperatives ensure production and supply of inputs on their own. An example is the newly established potato cooperative which works with diverse traders and is supported by TES centre/LMD.</p>

² Study on procurement methods (2014)

8.3. Market system change: Value Chain Supporters (Service Providers)

Promoted market approach: Agricultural Service Providers link processors/traders with farmer groups and provide services to agricultural producers in order to enhance their production capacity as requested by processors. SPs finance their services with fees paid by agricultural producers and the processors/traders.

<p>Adapt</p> <p>SPs see themselves as value chain facilitator and implement the project as foreseen.</p> <p>Some of them contribute with new ideas, such as the establishment of farmer cooperatives or seed funds</p> <p>Most SPs that are still working for LMD consider service provision as viable. All think that service provision to processors, traders, and farmers will remain a side income and does not finance their main expenditures.</p> <p>Agrobillim, RAS Jalalabad, TES centre, and Agrolead are satisfied with their relationship with processors, traders and farmer groups. They plan to continue working as a service provider for both.</p> <p>RAS Batken and RAS Chui don't derive enough funds from providing services. They don't plan to continue this providing services.</p> <p>The ability of partners to continue is not secured. Partners still depend strongly on donor funds and so their potential to offer services, in particular trainings to farmers.</p>	<p>Respond</p> <p>In addition to the service providers, several micro finance institutions (MFI) have emerged and offer financial services to farmers.</p> <p>SPs react on this with offering brokering services between finance institutions and producer groups. For some, yet few, service providers, this means an additional income.</p> <p>Besides the input supply services that have been integrated into the SPs' structures, some new input suppliers have evolved (see Chart 13)</p> <p>Another complementing function for the SP is the association of service providers. This has been a project driven institution and did not sustain.</p> <p>The ability of the complementing actors to scope with shocks has not been assessed.</p>
<p>Adopt</p> <p>TES Centre, RAS Jalalabad, Mehkr Shavkat and Agrolead invest independently into their brokering role. They act as input provider and sales agent for farmer groups.</p> <p>Their benefit sustain as long as buyers of the agricultural produce are available.</p> <p>RAS Batken, TAIC, RAS Chui and Agrobillim are not convinced about future benefits of their brokering role. No own investments are observed.</p>	<p>Expand</p> <p>The approach has been replicated by one private actor: the Contract Centre that links farmers to processors and even provides guarantees for product supply</p> <p>There is still space for new competing actors to crowd in, in particular for SPs offering guarantees to market partners, a service that none of the LMD partners dare to offer.</p>

9. References

Internal Documents of Helvetas

- ProDoc (2005): Project document of the local market development project; Phase 1.
- ProDoc (2008): Project document of the local market development project; Phase 2.
- ProDoc (2012): Project document of the local market development project; Phase 3.
- Annual Report (2005-2014): Annual reports of the local market development project.
- Half-Yearly Report (2005-2015): Half-year reports of the local market development project, 2005-2015.
- Dischl Raphael (2012): Impact study of the local market development project 2011/12.
- MTR (2011): Mid-Term Review of the LMD project in Kyrgyzstan in 2011.
- MTR (2014): Mid-Term Review of the LMD project in Kyrgyzstan in 2014.
- Value chain finance studies TJ (by Central Asia Investment, Training and Consulting) and KR (by RDC Elet) (2013)
- Study on seed/input supply in KR (2013) (Russian only)
- M-Vector (2013) Study on export trading companies in KR (2013) (Russian only)
- M-Vector (2013b) Study on agricultural associations and unions in KR. (Russian only)
- M-Vector (2014) Analysis of five selected value chains – KR
- AFVPE (2013): Study on procurement methods of agro-processors in KR (Russian only)
- Agroinform Asia (2012): Study of Fruit and Vegetable Processing Industry in Kyrgyzstan
- AFVPE / Agroinform Asia (2012/2008): Study of Fruit and Vegetable Processing Industry in Kyrgyzstan.

RIPLEY M. AND NIPPARD D. (2014): Making Sense of 'Messiness' Monitoring and measuring change in market systems: a practitioner's perspective. The Springfield Centre

NIPPARD DANIEL, HITCHINS ROB, ELLIOTT DAVID (2014): Adopt-Adapt-Expand-Respond: a framework for managing and measuring systemic change processes. Briefing Paper. The Springfield Centre for Business in Development.

M-VECTOR (2013): Research on export development in Kyrgyzstan. Desk research by M-Vector. Bishkek, Kyrgyzstan.

M-Vector (2015): LMD Impact Assessment. M-Vector, Bishkek, Kyrgyzstan.

SENTI (2003): Fruit and vegetable processing industry analysis. The Kyrgyz Republic, 2004. "SENTI" Financial Company.

SENTI (2004): Fruit and vegetable processing industry in Kyrgyzstan – Development Strategy. The Kyrgyz Republic, November 2002 - March 2003. "SENTI" Financial Company.

CENTER FOR TRAINING AND CONSULTING LLC UK (2008): Report on fruit and vegetable processing sector study in Kyrgyzstan. Bishkek 2008.

CENTER FOR TRAINING AND CONSULTING LLC UK (2012): Report on fruit and vegetable processing sector study in Kyrgyzstan. Bishkek 2012.

AFVPE (2014): Перерабатывающие предприятия Кыргызстана и Таможенный союз.
http://www.afve.org/section48/tamojennyi_souyz/

ICCO (2013): Agroinput Study. Russian: **Отчет** «по исследованию рынка семян овощных культур, саженцев и удобрений в цепочке добавленной стоимости плодоовощного сектора Кыргызстана».

TYMOTHYNUNAN (2015): Map of political areas in Kyrgyzstan: <http://timothynunan.com/2012/02/26/a-trip-to-talas-observations-on-four-kinds-of-networks-in-rural-kyrgyzstan-part-i/>

Annex 1: Work plan of author's Kyrgyzstan mission; 2015

Date	Oblast	Name of interviewed person or activity	Position / Institution
10.9	Bishkek	Eugene Ryazanov	LMD project manager from 2005-2012
12.9	Bishkek	Meerbek Erdoolatov	LMD project manager from 2012-2014
13.9	Bishkek	Kick off workshop CAPEX LMD: Markus Ischer, Peter Schmidt, Samat Toigonbaiv	
16.9	Issyk kul	1 actual farmer group of the NGO Agrolead	Actual farmer group
	Issyk kul	1 former farmer group of the NGO Agrolead	Former farmer group
17.9	Issyk kul	Syrgabek Joibolotov	Manager of RAS Jalalabad
18.9	Issykkul	Gulnaz Kaseeva	Manager of Agrolead
21.9	Jalalabad	Syrgabek Joibolotov	Manager of RAS Jalalabad;
		1 actual farmer group of RAS Jalalabad	Actual farmer group
		1 former farmer group of RAS Jalalabad	Former farmer group
		Manager, Anvarjan Kasymov; Balapan processor	Manager of processing company
22.9	Jalalabad/Osh	1 former farmer group of Mehkr Shavkat	Former farmer group
		1 actual farmer group of Mehkr Shavkat	Actual farmer group
23.9	Osh	Minabarjon (Baltabai) Eraliev (Mehkr Shavkat)	Manager of NGO Mekhr Shavkat
		Rahimov Ramil; Kelejek Vegetable Processor;	Production manager
		Baktygul Satykulova and Abdytalyp Jusubaliev (TES center)	Manager of LMD activities and chief agronomists at TES center
25.9	Osh	Name director Agroconsulting (association of rural advisory service providers)	Director of Agroconsulting
	Osh	Farmer cooperative in Aravan, TES center	Actual farmer group
	Kizil - Kiya	Farmer group in Kizil - Kiya, Mehkr Shavkat	Former farmer group
	Kizil - Kiya	Berdikul Abdibaito; Manager Agroplast	Manager of processing company
	Kizil - Kiya	Berdikul Abdibaito; Manager Agroplast	Manager of processing company
26.9	Kizil - Kiya	Ibragim Ryskulov, NGO Agrobilim, and 3 field agronomists	Manager of NGO Agrobilim
26.9	Kizil - Kiya	1 Farmer group of Agrobilim	Former farmer group
28.9	Kadam Jay, Batken	Shabidin Esenaliev; Manager of RAS Batken	Manager of RAS Batken

	Kadam Jay, Batken	Apricots and Rice Processer; Murzalim Asrankulov (Kadam Jai)	Manager of processing company
29.9	Batken - Khujand	Tursunali Tolomushov; Alysh-Dan Cooperative	Manager of cooperative
	Batken - Khujand	Former FG RAS Batken	Former farmer group
	Batken - Khujand	Actual farmer group RAS Batken	Actual farmer group
	Batken - Khujand	Abdirashit Khalmurzaev, Mol Tushum Cooperative	Manager of cooperative
5. 10	Bishkek	Aleksei Lavrinenko	Resource person
	Bishkek	Dilyara Alimjanova, Association of fruit and vegetable enterprises	Association
	Bishkek	Muratbek Ismailov (ICCO)	Manager of ICCO KG
	Bishkek	Sherip Berdaliev, Ras Chui Talas	Manager of RAS Chui Talas
	Bishkek	Roman Pogojev	Manager of M-VCTOR and Ekfrut
6. 10	Bishkek	Nurbek Okishev; Manager TAIC	Manager of TAIC
	Bishkek	Former farmer group of TAIC	Former farmer group
	Bishkek	Akhtyam Kashveev, Director of OSKA	Manager of OSKA
7. 10	Bishkek	Adilet Maimekov; ICCO	Collaborator ICCO
9. 10	Bishkek	Debriefing meeting with Markus Ischer, Samat Toigonbaev, Eugene Ryzanov, Muratbek Ismailov, Elisabeth Katz, Damira Raeva	