External Mid-Term Review (MTR) of the Inclusive and Sustainable Vegetable Production and Marketing Project (VEGI)

REPORT

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on demand of

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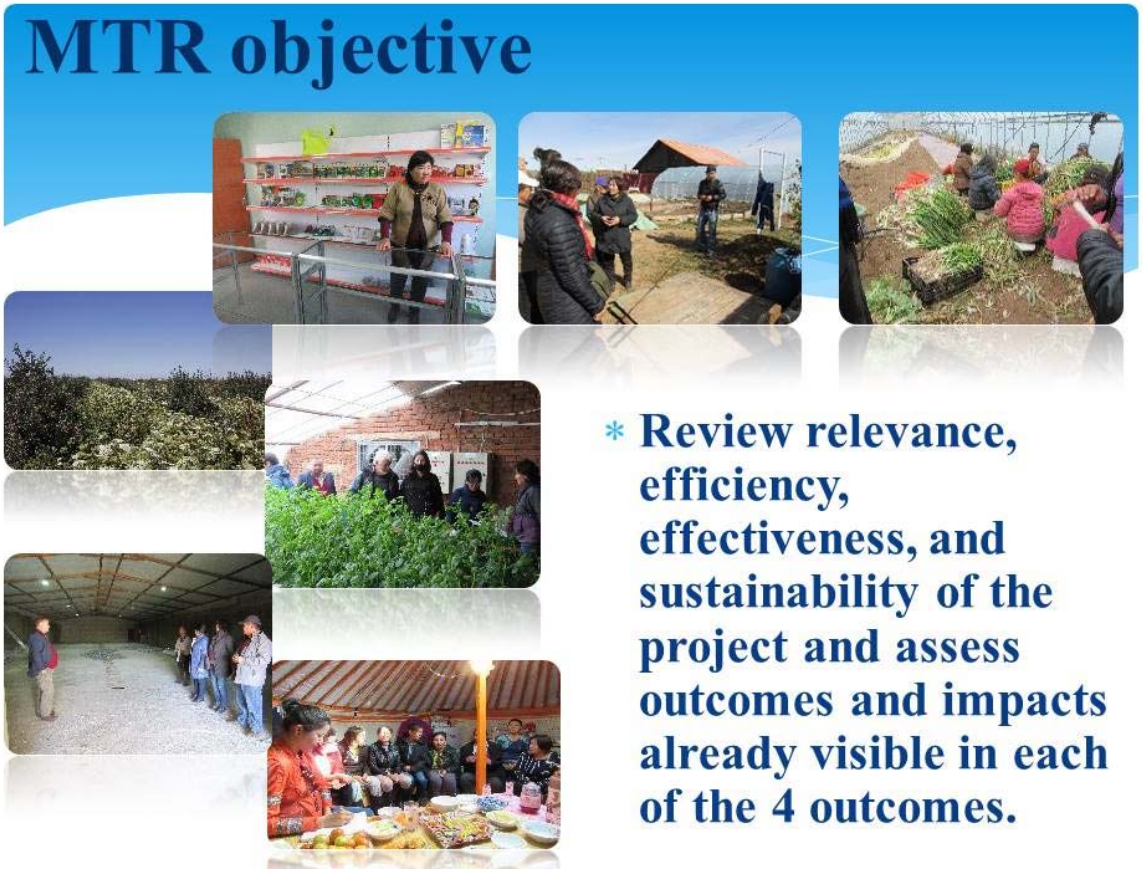
1 MTR of the VEGI project

Mission of the project:
To contribute to poverty alleviation and improved livelihood of rural households

* **Increased domestic vegetable production and better variety seeds, technology and know how**
* **Increased income of vegetable farmers, and improved market**
* **Improved production and consumption vegetable gardening in urban and peri-urban area**
* **Improved Policy and legal institutional framework of vegetable sector**



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Abbreviations

FAO	Food and Agriculture Organization
FFS	Farmer Field School
GAP	Good Agriculture Practice
IPM	Integrated Pest Management
MFARD	Mongolian Farmer Association for Rural Development
MNCCI	Mongolian National Chamber of Commerce and Industry
MoFALI	Ministry of Food and Agriculture and Light Industry
MOGFA	Mongolian Organic Green Food Association
MPP	Mongolian Potato Programme
MTR	Mid-Term Review
MWFA	Mongolian Women Farmers Association
NGO	Non-Governmental Organization
PPP	Public Private Partnership
SDC	Swiss Development Cooperation
SECIM	UNDP/FAO supported project on job creation and employment
SICA	Statistical Institute for Consulting and Analysis
SME	Small and Medium Enterprises
SRF	Seed Reserve Fund
ToT	Training of Trainers
UB	Ulaan Baatar
VEGI	Inclusive and Sustainable Vegetable Production and Marketing Project

2 Executive Summary

The Inclusive and Sustainable Vegetable and Marketing Project (VEGI) has been initiated as a specific outcome in the frame of the successful Mongolian Potato Programme (MPP) that was implemented from 2005 until 2015, and funded by the Swiss Agency for Development and Cooperation (SDC) together with the Government of Mongolia. VEGI as a self-standing project is planned for two phases, the first implementation phase from 01.02.2016 to 31.12.2019 and the second consolidation phase from 01.01.2020 to 31.12.2022.

The sector approach of MPP benefitted large farmers more than smallholders, especially those who do not have sufficient resources to invest in productive inputs such as high quality seed, fertilizers and irrigation. This is why the VEGI project, beyond the sector approach, has a much more explicit focus on resource poor household farmers, on women and on peri-urban and urban resource poor people.

The overall project goal is to contribute to improved livelihood of vegetable growers (including small-scale farmers in rural areas and poor households in urban/peri-urban areas) through inclusive, gender balanced and sustainable growth of the vegetable sector. The growth of the vegetable sector is ensured through vegetable seed multiplication, promotion of vegetable production techniques and inclusive markets providing better marketing conditions for the farmers and through improved legal framework conditions.

The main project implementing agency is the Mongolian Farmers' Association for Rural Development (MFARD), who works together with the Mongolian Women Farmer Association (MWFA) for outcome 3. Outcome 4 is implemented by the FAO representation in Mongolia. The total contribution of SDC amounts to 5 million CHF, and the Government of Mongolia is expected to contribute 500'000 CHF over 4 years.

The VEGI project (Inclusive and Sustainable Vegetable Production and Marketing Project) is designed as a facilitating structure aiming at linking relevant stakeholders of the vegetable domain for specific activities and thus contributing to improvements of many mechanisms of the vegetable value chain. Only few activities are implemented under full responsibility of the main implementing agencies MFARD (with MWFA as sub-contractor) and FAO. This design fosters the chances of sustainability of the action lines of the project.

Eighteen months after the project start, at about mid-term of the first project phase, the Mid-Term Review is to assess the state of the art of the project implementation and to come forward with recommendations for the rest of the first project phase and recommendations for consolidation and phasing out in view to assure biggest sustainability of the project effects.

In form of a newspaper headline, the project could be assessed in brief:

VEGI project, well designed and diligently implemented

The results after one and half year are encouraging in most domains. We briefly resume the main results.

Outcome 1: Domestic vegetable production of farmers is increased through better varieties, seeds, improved technology and know-how:

- ✓ Seed testing and releasing well installed
- ✓ Seed production (in-country) for five vegetable species functioning well
- ✓ Import of hybrid seeds for MFARD members and other farmers assured
- ✓ Seed distribution system in 21 Aimag and 16 Soum centres established
- ✓ Extension centres for training and knowledge exchange among active farmers
- ✓ Multiple innovations in vegetable production visible

Outcome 2: Income of vegetable farmers, especially small scale farmers and women headed households is improved through improved and inclusive markets for vegetables:

- ✓ First cooperatives established
- ✓ Common storerooms at Soum level / cabbage storage in Zuunkharaa and Bornuur
- ✓ One first production contract for cabbage production with Delta Company
- ✓ Direct marketing channels, still to be developed further
- ✓ Market information on web site, sms, mobile application
- ✓ Campaigns and marketing actions to raise awareness

Outcome 3: Vegetable production and consumption of poor households in urban and peri-urban areas are increased through vegetable gardening:

- ✓ Nine model streets installed, household vegetable growing
- ✓ Technical assistance and subsidies for seed, irrigation, greenhouses, small equipment
- ✓ Training and knowledge sharing, tours and visits
- ✓ Demonstration plots in UB schools and kindergartens
- ✓ Cooperation with and support by agriculture department of UB city
- ✓ Promoting consumption and storage initiation for beneficiaries

Outcome 4: Policy/legal and institutional framework of the vegetable sector is improved:

- ✓ Conclusive analysis about international standards and treaties
- ✓ Trainings on IPM: ToT and FFS, training material
- ✓ In pipeline (in progress): Seed policy legislation development – formulation stage; baseline pesticide residue study; Law on Organic Agriculture and regulation implementation on vegetable sector.

So far, the project has not spent the budget in the planned rhythm. However, the fact that the budget has been spent only to about 2/3 should not be interpreted as lack of engagement of the project team, but more as diligent steering of the project activities. The project follows the principle of starting activities only with strong and reliable stakeholders as project partners. This induces, that some activities started slower than assumed at the moment of the project planning. For outcome 4, personnel changes in FAO have delayed the start of project activities by more than six months.

The main recommendations for the further implementation of the project are as follows:

- ➢ Maintain the facilitating structure and approach of the project.
- ➢ Contribute to the development of an agricultural credit scheme in cooperation with MoFALI and banks.
- ➢ Consolidate the seed reserve fund and extend quality vegetable seed production nationwide through establishment of a platform / PPP structure.
- ➢ Continue the establishment of new UB whole sale market and marketing platforms.
- ➢ Strengthen farmers' cooperatives for storage and marketing, support branding of quality products, such as organic farming.
- ➢ Re-design the vegetable production approach in the ger districts, based on a small business oriented approach (micro-credit, access to local market).
- ➢ Define priorities in the revision of the legal frame (seed-business, organic production, public procurement for schools, etc. on local vegetable markets.
- ➢ Establish platforms to well coordinate revision of legal frame with concerns of all relevant stakeholders of the vegetable domain.
- ➢ For SDC: Plan a consolidation phase of 3-4 years (2020-2022/23) as follow-up to the present implementation phase of the VEGI project, as taken into consideration in the executive summary of the Prodoc.

3 Introduction

3.1 Terms of Reference

The ToR state following orientation for the Mid-Term Review:

The External Mid Term Review (MTR) will assess the relevance, efficiency, effectiveness and sustainability of the VEGI Project implementation and will assess the delivery of the project so far at outcome and output level taking into account internal and external factors to the project's performance.

The MTR is requested to update the analysis of the context, the assumptions and the risks done during the project planning (see Project Document).

Recommendations of the MTR need to take into account the context changes or changes in the risks and the assumptions.

The MTR has the following objectives:

1. To review the relevance, efficiency and effectiveness of the project outputs to date and assess outcomes and impacts which may already be visible in each of the 4 outcomes.

2. To make recommendations to improve the poverty focus, the gender equality mainstreaming and the sustainability of the project results and the sustainability of the implementing organisations, such as the MFARD.

Specific topics per outcome

3. In outcome 1: to assess the current status of the established Seed Fund and to provide recommendations on how this Seed Fund should be improved in order to be sustainable at project end. Make a special assessment on the Seed Fund regulation and provide comments and recommendations. Make additionally a special analysis on the sustainability of hybrid seed imports and distribution to small scale farmers in particular.

4. To assess progress in outcome 2 particularly on the collaboration between farmer's cooperatives and associations and the private sector especially in storage, packaging and marketing. Make recommendations on how to improve this collaboration and to scale up best practices. Verify whether the assumptions and scenarios made in the cost benefit analysis were realistic and are still valid.

5. To assess the progress of outcome 3 in the promotion of vegetable production in the GER district of UB, and provide recommendations for SDC whether this component should be extended as initially planned in 2018 to the GER districts of Darkhan and Erdenet. In this case, provide recommendations on the implementation modalities of this component in those cities.

6. To assess the progress made in outcome 4 and verify whether the legal and institutional assessment identified the relevant topics to be addressed in order to ensure a conducive environment for the sector support.

Detailed ToR for the VEGI MTR see annex 4.

3.2 Methods and Structure of Report

The report is based on information extracted from basic project documents and gained in interviews with implementing partners in Mongolia (MoFALI, MFARD, MWFA, FAO, SECIM, SICA; MOGFA) and Switzerland (HAFL). Interviews have been conducted with partner organizations and beneficiaries of the project in the period from 27 September to 05 October 2017. Details are accessible in annex 3 (schedule of the mission). Feedback got during the debriefing

with stakeholders on 09 October 2017 and with SDC and project implementing organizations (MFARD, FAO) on 11 October 2017 are integrated in this report.

The report is structured along the logic of the ToR. After the executive summary (chapter 2) and the introduction (chapter 3), a general assessment of project is made (chapter 4): changes in the context, assumptions and risks are verified and briefly discussed; relevance and (already visible) impacts, effectiveness, and efficiency are summarily analysed and commented, and finally, poverty focus, gender equality and sustainability are scrutinized.
In chapter 5, the four outcomes are examined; the specific questions raised in the ToR are discussed under each respective outcome.
Additional specific topics (such as food safety, agricultural (micro) credit and extension of the project period) are taken up in chapter 6.
Recommendations are inserted in all chapters; the main recommendations for the further implementation of the VEGI Project are resumed in chapter 7. The recommendations are always sequenced according to their importance, from important to less important, except the recommendations in the executive summary, which are all of same importance.
Chapter 8 contains helpful graphical representations that might support the further project implementation and steering.

3.3 Thanks

The MTR team would like to express its gratitude and thanks to all persons and organizations for their time, the information shared and the frank discussions to which they contributed during our visits. We also would like to express our appreciation to all project partners for their interest, energy, motivation invested in the vegetable sector.

A special thank goes to the VEGI project team for their continuous readiness for additional information, search for documents, translation services, logistical support, and all the open discussions we had together.

3.4 Disclaimer

The designations employed and the presentation of material in this report do not imply the expression of opinion whatsoever on the part of the Swiss Agency for Development and Cooperation or MFARD. Content of the report is exclusively the responsibility of the authors.

4 General assessment of the VEGI project

4.1 Changes in the context, Assumptions and Risks

The recent elections in Mongolia induced a **change in policy**. Parliament elections took place in 2016, with the new cabinet established. The Presidential election have been held in 2017, followed by a reshuffling of the cabinet in October 2017. Today, the vision of the President of Mongolia focuses much more on food security and food sovereignty than it has been the case in previous years, which is a remarkable change in the policy context for the VEGI project.

The Government of Mongolia declared a new agricultural policy for the year 2017-2020. The in-country production of vegetable is expected to raise by 20% till 2020. The "National program on Vegetable" had been approved by the Government of Mongolia in September 2017, with a first implementation phase 2017-2020 and a second consolidation phase 2021-2024.

Regional development with emphasis on local marketing is put on the agenda. Increased vegetable consumption for a better health is declared policy. However, MoFALI states to have only marginal budgets available to actively promote this policy.

The Law on organic food has been adopted in 2016; standards for organic agricultural production and food safety are to be defined in the coming years. The national programme on organic food including vegetable production sector development is expected to develop its impact in the coming years (organic food production, organic vegetable model farming, cooperatives, etc.). In urban areas, there is undoubtedly a customer's interest of buying organically grown, processed, and packaged vegetables.

There is a **changing trend in the attitude of customers**. The need to produce for customers demand will grow in the coming years; user friendly packaged vegetables, geographical indication (local branding), and quality certificates might become more important in the growing urban market.

Export oriented initiatives by foreign stakeholders (mainly from China, Korea and Japan) in organic agriculture become visible. This trend needs to be observed in view of access to arable land prone for vegetable production in Mongolia.

Compared to the end of last century, the climatic conditions have become harsher. Especially the rainfall patterns in 2015, 2016, and especially 2017 have been critical with a big impact on harvests.

Two **risks** mentioned in the Prodoc seem to be very minimal at the moment: The risk of removal of import tax on vegetable and the general political risks after the elections.

The risk of young people not being interested in agriculture persists. It could be reduced through testing and implementing a business development model with local market orientation, establishing vegetable value chain networks with successful marketing policy, business training offers, and access to credit with favourable terms to get businesses started. Also young farmers need inspiration and practical knowledge through internship.

The market domination by few wholesalers is still a big risk. VEGI projects applies three strategies to cope with this risk: (1) contributing to the initiative for a new wholesale market in Ulaanbaatar, (2) establishing vegetable collection & distribution centres in Ulaanbaatar and Orkhon-Uul Aimag, and (3) supporting cooperatives to make contracts with big organizations.

The lack of interest of the target groups seems to get smaller: in recent years many people and companies have shown interest in farming. Also greenhouse business is increasing.

We would like to pinpoint two other emerging risks: (1) The risk of degrading soil fertility due to improper management (exclusive use of chemical fertilizer without sufficient organic manure, excessive or inappropriate use of chemical pesticides, and wind erosion), and (2) the risk of overusing groundwater in UB area due to uncontrolled expansion of irrigation for vegetable gardening.

4.2 Relevance and (already visible) impact

Practically all interview partners confirmed the high relevance of the VEGI project ("The VEGI project is the right project in the right moment"; "VEGI is a good mix of technical support, training and investing in favourable frame conditions"; "VEGI encourages farmers to continue farming and not to quit their farms by economic reasons").

Innovative farmers prove, that vegetable production can make a good living (example: Atriin shim company in Zuunmod; cabbage and onion growers in Zuunkharaa). Reliable seed procurement at realistic price, access to equipment and storage facilities have a positive impact on farmers. Farmers adhering to cooperatives make first positive experience with more reliable marketing channels. Big and medium size entrepreneurial farmers offer jobs (permanent and seasonal) and thus indirectly contribute to reduce poverty in peri-urban and rural areas. Vegetable producers in ger districts improve their diet, save money for buying vegetables, get additional income by selling self-produced vegetable and mention a positive effect on the social life in their ger street.

Professionalism of farmers and motivation for vegetable production has increased thanks to training and sharing of experience. Extension centres are becoming agricultural focal points for seed, renting equipment, as well as sharing and improving knowledge and skills.

However, the fact that there are only few young farmers active in the vegetable domain might be a sign of a still persisting low attractiveness of the agricultural sector till date.

While assessing the impact of the VEGI project, one has to take into consideration that vegetable production is highly dependent on rainfall patterns and temperature; 2017 has been a drought year with rainfall starting only in August, thus reducing heavily the harvest.

Integrated pest management and organic production are declared objectives both by the Government of Mongolia as well as the VEGI project. However the absence of clearly defined standards and certification mechanisms make it impossible to assess the real impact in this domain.

4.3 Effectiveness

The VEGI project has produced effective changes in the vegetable seed production (stabilizing of the seed price, assuring quality and quantity in seed delivery, access to imported hybrid seed) as well as in vegetable production (equipment, training, knowledge sharing). In the domain of marketing, solid results become visible (cooperatives active in storage and marketing, direct marketing channels, platforms of vegetable marketing stakeholders in different Aimags, explorative steps for the establishment of a new wholesale market in UB). In the model streets women groups demonstrate, what is possible under concrete conditions of the ger districts. The revision of the legal frame just started; it is too early to assess its effectiveness.

The project tracks and records outputs, outcomes and (already observable) impact in its monitoring sheet (annex 1) following the structure of the Logframe. The internal observations are done and recorded in time and inform on all project activities. Most indicators are ok; some of them need a slight adaptation to produce meaningful data. To improve, in addition to the sheer number of trainings and participants, results of training (farmers' skills and applications in the

field) could be monitored through photo monitoring or video documentation.
More details are presented in the following chapters about the four outcomes and in the monitoring sheet of VEGI project (annex 1). The monitoring sheet has been thoroughly discussed with the M&E specialist of the project in order to find optimal indicators (meaningful indicators with relatively easy data collection). However, keeping monitoring at scale and trying to combine monitoring with useful productive or PR activities remains a must. Monitoring never should be too costly compared to the investment in productive activities (ideally 2% to max 5%, including staff costs).

4.4 Efficiency

So far, the project has not spent the budget in the planned rhythm. The fact that the budget has been spent only to about 2/3 should not be interpreted as low efficiency or lack of engagement of the project team, but more as diligent steering of the project activities. The project follows the principle of starting activities only with strong stakeholders as project partners. This induces, that some activities started slower than assumed at the moment of the project planning. MTR team interprets this fact as efficient spending of money, i.e. in the moment when the situation is “ripe”, when partners are prepared and ready to take action.

During the MTR we could observe several times a diligent use of money. The office infrastructure of the VEGI project is extremely modest. A bigger meeting room is hired when demand exists. The project is not over staffed and not over mechanized, neither with office equipment nor with cars.

Underspending of the budget can be addressed in three ways, (1) by extending the project duration, (2) by revising the budget attributions, and (3) by hiring additional staff or consultants for specific issues that need more intensive activities to react on recommendations formulated later in this report (e.g. (i) further development of the seed reserve fund (SRF), (ii) activities to promote and install an agricultural credit scheme, (iii) respond to possibly rising training demands in cooperative management and negotiation skills and intensify PR activities, (iv) designing an alternative approach in the ger districts, (v) more intensive work on revision of specific issues of the legal frame, etc.). Subcontracting with professional, successful agencies and NGO’s or recruiting talented, innovative and motivated staff especially applies for outcome 2 (marketing) and outcome 4 (legal frame), where underspending of the budget is most significant.
However, in any case, VEGI should maintain its policy in spending money diligently, and steer and monitor the fruitful spending of money carefully.

The time frame for the MTR did not allow a more detailed analysis of the efficiency of the project. Observations during the MTR did not indicate, that the efficiency should be observed more closely.

4.5 Sustainability

VEGI project is designed as supporting and facilitating project, bringing other actors in the driving seat, and thus contributing to a more solid structure of the vegetable network in Mongolia. However, the subsidies in form of direct payments, and services of VEGI staff are important contributions in the vegetable stakeholder system. In the coming two years, all direct support needs to be checked and eventually re-designed in order to make it sustainable without project financing.

MFARD policy to first start small with active MFARD members and only later attract more members – including household farmers, business entities, SME of the vegetable sector – through convincing results is for sure a solid approach and chances for sustainability are high.

However, MFARD with more members (and higher member fees) would be economically stronger and more independent from donors; furthermore it might have more influence on the market and in political discussions.

Mongolia counts about 35'000 vegetable farming families, 400 vegetable producing companies, 1'200 crop farmers and companies, a total of 36'600 farmers, out of which 1'200 farmers are MFARD members. Out of them, only 20-40% are active members (observation of MTR team during interviews).

How will MFARD develop in the coming two to six years? A possible development is drafted in annex 5 "Sustainability recommendations for implementing organisations – MFARD".

In the coming two years, MFARD, as well as MWFA, will have the challenge to diversify its financial resources. With MoFALI, MFARD might negotiate what services offered to vegetable famers are in a public interest (e.g. reliable seed provision), and thus merit a compensation by the Government. Private businesses might be challenged in a similar way for services rendered by MFARD in organizing marketing platforms bringing producers and market stakeholders together. Higher membership fees might be another topic to discuss (many active members are ready to pay higher fees, based on the experience that MFARD services are very valuable and reliable). The seed reserve fund might – with some adaptations – be sustainable. The extension centres need to develop an income strategy based on the suggested business plan to become sustainable.

4.5.1 Specific topic: Poverty focus, gender equality and sustainability

To make recommendations to improve the poverty focus, the gender equality mainstreaming and the sustainability of the project results and the sustainability of the implementing organisations, such as the MFARD.

Poverty focus is well implemented in outcome 3 and to a lesser extent in outcome 1 and 2, and so far not yet in outcome 4.

Outcome 3 focusses exclusively on poor households in ger districts of UB. The project supports vegetable production in the selected model streets with high subsidies (80-90%), which opens room for discussion about the motivation of ger dwellers to adhere to such a programme. According to the MTR team impressions (from interviews and based on experience of similar projects), ***only a limited number of people (30-40%) seem to take up ideas, start changing their behaviour and have a motivation to continue new activities; for the remaining people, there is a risk of leaving vegetable production when the project support ends.***

For production and marketing of vegetable (outcome 1 and 2), the services of MFARD branches are accessible to all farmers: Seed shops, trainings in the extension centres, and renting equipment are accessible to all; members of MFARD have certain advantages. MFARD Membership fee is very low (initially MNT 20'000 and annually 10-12'000) compared to potential additional income. VEGI project and the seed reserve fund have a stabilizing function on seed prices; first positive effects of better market prices become visible.

Well-off medium and big size farmers create jobs for poorer people. While supporting SME farmers, the project has a big influence to reduce poverty. Poorer people acquire know how on techniques of vegetable growing and will be in a position to start their own small farming.

Outcome 4 should focus also on small size vegetable producers to open an outlet to local markets with the revision of the public tender law for procurement of food on local markets for canteens of schools, hospitals, military camps and other public units; FAO and MoFALI are invited to consider this issue in forthcoming law revisions.

Gender equality mainstreaming: Mainly women are active at household and vegetable farm level (60-70%); at mid-level (MFARD staff, Soum staff, city administration, school, kindergarten) more women than men are in active positions. Men often occupy leading position in organizations and administration.

The project monitoring keeps trace of gender issues (participation in trainings, etc.). There is no need for specific gender specific interventions within the project.

More important than gender might be the age related issue in vegetable production: How to attract younger generation's interest for vegetable farming? Activities in kindergarten and schools focus rather long term effects. PR activities in colleges or in classes of the secondary school, when young people take decisions for their professional career might be considered in this respect.

4.5.2 General recommendations

- Maintain the basic project setting as it is; further strengthen the facilitating and supporting role of VEGI project.
- Keep monitoring of activities and results effective (meaningful indicators) and efficient (data easy to collect). Adapt several indicators as per suggestions given in annex 1. Accordingly, complete baseline data collection (2016).
- To address the underspending of the budget, analyse the potential to hire additional staff or consultants/agencies in order to intensify certain programme components; delegate specific actions under outcome 2 and 4 to experienced consultants, teams or agencies based on well-designed ToR and monitoring.
- In the poverty oriented programmes, keep the focus on economically viable solutions with integration into local markets (small business approach) more than on poverty alleviation through social programmes.
- While discussing gender related issues, focus more on the generation gap (young generation of farmers) than on gender gap.

5 Assessment of the four outcomes of VEGI project

5.1 Outcome 1: Production

Seed testing and releasing is well installed, but highly dependent from project money. Core criteria for new varieties are yield, early maturity, biochemical characteristics, storage capacity, and pest resistance. Extending the tests to more vegetable varieties and species is an open issue. Species with high market price and expected increased demand such as pulses, legumes, pumpkins, melons, leek, peas, greeneries (celery, spinach, basil, rosemary etc.) might be interesting for Mongolian climatic condition.

In order to diligently steer the seed testing and releasing, it is advised to establish a formal platform involving University/IPAS, MoFALI, business enterprises (such as Elite seed and others), MFARD, further stakeholders within the coming two years. VEGI project could have a facilitating role in this platform and assure that all interests are heard and taken into consideration in the testing and selection process. After VEGI project, this platform could persist under the coordination of MFARD (based on a mandate of MoFALI or all platform stakeholders; the platform could evolve into a PPP (Public-Private Partnership) with diversified and well defined roles of each stakeholder. In the Swiss agricultural domain, dozens of such theme-specific platforms prove their usefulness, effectiveness and efficiency to coordinate a discussion process and to find optimal solutions.

Seed production of the five main vegetable species (cabbage, onion, turnip, beetroot, and carrot) and seed distribution are well installed. The seed system initiated by MFARD had a stabilizing effect on seed prices at the level of wholesale prices for producers with a margin of around 25% for seed sale to vegetable growers. Vegetable seeds are accessible to farmers in 21 Aimag and 16 Soum centres where an MFARD branch is existing (corresponding to the vegetable growing areas).

Equipment for vegetable production is available in 20 Soum and 12 Aimag centres (2 cabbage centres, 21 fertilizer spreader, and 29 sprayers for 25HP mini-tractors); the extension centres are renting out this equipment to farmers (priority and discount to members). The extension centres are responsible for the maintenance of this equipment. MFARD might negotiate a programme with MoFALI for suppling equipment to similar conditions as for greenhouses (credit over 4 years to lower conditions than bank loans). MFARD might also check possibilities to produce equipment locally (as it is the case for the onion set planter and cabbage boxes in Zuunkharaa).

MFARD provides training in essential topics of vegetable production and marketing through extension centres and in 5 western and 3 eastern Aimags. In the monitoring of the training, one finds figures about number and topics of training, and number of participants. The evaluation of training effects, e.g. test of farmers' knowledge gain, observation of changes in farmers' practice is missing.

For the promotion of integrated pest management and organic farming, ToT (Training of Trainers) and FFS (Farmer Field School) are organized under outcome 4. For the MTR team, this programme logically should be part of outcome 1 and well-coordinated with other training activities.

MFARD supports a learning by doing approach and cooperates with the private business sector, e.g. with Atriin shim Company in Zuunmod, Tuv Aimag, who offers internship to agricultural students (6 months every year) and has open doors for visitors on study tour.
An extension center for greenhouse farmers is suitable to be built in Zuunmod in connection with the facilities of Atriin shim greenhouse farm, to transfer knowledge and

know-how of greenhouse industry to young farmers (practical knowledge and training). This extension center could have a special service not only for MFARD members but also to all farmers in UB area (urban and peri-urban) and nearby Soums. ***This extension center could be developed as a model farm and field test site for scientific research works of young specialists to test new varieties and technologies on site.*** After the project finishes, Atriin shim might contribute to operational costs and thus to the sustainability of the extension center for coming years.

The sustainability of the extension centres is a challenge that has been tackled by the VEGI project. Draft business plans for MFARD branches / extension centres are developed searching for income diversification (member fees to be raised, bigger margin on seed, production on demonstration plot and greenhouse, renting equipment, etc.). These business plans need further discussion and are expected to be finalized in early 2018.

New vegetable production techniques appear in different Soums, e.g. onion seed planter developed by a farmer in Zuunkharaa. The efficiency of this equipment provoked a demand from others. Another new technique coming up is black mulching: Onion produced on plastic covered soil allows a second crop (beetroot) in the same season. There are more: Local manure produced in egg factory; green manure with pea & oat, etc. MFARD will have to play an active role in propagating these equipment and techniques. Why to go slow, if the demand is big?

Vegetable production, quality and quantity, depend not only on know-how of farmers and accessible equipment, but also on climatic conditions and on market access. So, VEGI outcome 1 his highly connected with outcome 2.

The implementation of outcome 1 has been almost as per plan (2016: 85% of the budget spent; 2017/II: 46% (2017/III: 62%) of the budget spent).

5.1.1 Specific topic: Seed Reserve Fund

In outcome 1: to assess the current status of the established Seed Fund and to provide recommendations on how this Seed Fund should be improved in order to be sustainable at project end. Make a special assessment on the Seed Fund regulation and provide comments and recommendations. Make additionally a special analysis on the sustainability of hybrid seed imports and distribution to small scale farmers in particular.

MFARD has started vegetable seed activities in 2009 and has formally created the seed reserve fund within its own NGO structure in 2017 as a tool to stabilize the seed price, to guarantee the seed multiplication and supply of the five major vegetable species (cabbage, onion, turnip, beetroot, and carrot), and assure a seed supply of other vegetable species in seed shops. From 2010 to 2014 it has doubled its business (3’400 to 7’400kg). Today, vegetable seeds are accessible to all farmers of vegetable growing areas in the seed shops of the extension centres or through MFARD branches in the Soums and Aimags. Farmers need to order the seed well in advance. In case the demand cannot be fulfilled (e.g. bad seed harvest, interrupted seed procurement from abroad), the seed reserve fund shortens the quantity in equal proportion to farmers’ demand.

According to the manager of MFARD, the seed reserve fund is designed to finance itself; as income there is a margin of MNT 5’000/kg on wholesale price to cover the expenditures(two partial salaries, transport, storage, packaging costs and promotion subsidies for newly released varieties. At present, the seed reserve fund is subsidized through project funds. ***According to an internal budget analysis of the seed reserve fund, the margin on the wholesale prices must be increased in future, in order to maintain today’s services and promotions of new varieties (today’s margin: 36%; future margin: 70-80%).***

The value of the seed stock in early 2017 (before sales) is estimated to 220 million MNT.

The seed reserve fund is established as a legal activity of MFARD according to the law on NGOs in order to self-finance the NGO. With its activities, the seed reserve fund generates a benefit that allows to grow in order to serve more farmers in the coming years. As long as the benefit remains within the NGO and is used for the declared purpose, there is no legal obstacle to make benefits. SDC had put a question mark behind the legal status of the seed reserve fund. If such doubts persist, the legal consultant of FAO might further analyse and clarify this issue.

The seed reserve fund is to a large extent an agricultural credit scheme: Pre-financing seed growers, giving seed on credit to vegetable growers, keeping a seed reserve on stock for years with low seed production. In order to des-engage MFARD from credit activities, ***the MTR recommends that VEGI projects takes up an analysis about the feasibility of an agricultural credit bank with conditions suited for the needs of farmers.*** The present annual interest rates of commercial banks are by far too high for farming business. A generally accessible agricultural credit system could equally benefit crop farmers and would not be limited to financial needs for seed, but include agricultural equipment and machinery, marketing, etc.

The council of the seed reserve fund has yet not been established. This fact is not compliant with the act. MFARD needs to establish the council and convene a first formal meeting.

The Act of Vegetable Seed Reserve Fund contains a solid basic set of rules and regulations about the purpose, establishment and general functioning of the Fund. However, to steer the Fund's day-to-day operations, rules and regulations of the Fund need to be further specified, based on the established good practice. In order to foster the fund's sustainability and to prevent problems in case of future change of personnel, the MTR recommends to further discuss, specify and define in written form following issues as "Rules and Regulations for the Seed Reserve Fund":

- Check paragraphs 1.2 and 1.6 of the act; they might be contradictory (legal form)
- Establishment of the Council for due independent supervision of the seed reserve fund's activities and transactions
- Form of technical and financial reporting and reporting period (e.g. semi-annually)
- Standards for contracts with agreed seed farmers (pre-payment, inspection, quality control, …)
- Seed distribution in case of lesser seed stock than demand (e.g. proportional reduction of all orders; or full delivery of small and reduction of big orders only)
- Subsidies for the promotion of new varieties (e.g. decreasing subsidy rates during three years; special rules for hybrid seeds; special rules for members; limitation of subsidies to 1ha/farmer, etc.)
- Credit to farmers for purchase of seed (interest rate, credit for members only (?), rules in case of no-repayment)
- Check suitability for insurance / security measures for the seed stock against calamities
- Medium to long term development and financial plan of the seed reserve fund (business plan) in order to make the seed reserve fund independent from project finances; verify and compare the business plan annually with real figures!

Hybrid seeds: To its members and other qualified (experienced) farmers, MFARD distributes also hybrid seeds (e.g. cabbage variety "Hurricane", and – in smaller quantities – tomato and cucumber for greenhouse production) with decreasing subsidy rates (from 50% in 2015 to 0% in 2019). VEGI project subsidises the testing of newly released hybrid seeds. Once the effect of hybrid seed is known among farmers, hybrid seeds should be sold at real market price (without any subsidies); the additional yield multiply pays back the additional investment.

The production of hybrid seed necessitates rather advanced technologies. For the coming years, production of hybrid seed in Mongolia will not be an option; hybrid seed necessitates import from abroad as it is the case today. Selling hybrid seed to small scale farmers will necessitate appropriate and professional packaging with explanations in Mongolian language in order to visualize the quality and the limits of hybrid seed.

VEGI project should contribute to maintaining and multiplying well performing local seed. There is a risk, that Mongolia would become dependent from foreign seed producers, if exclusively hybrid seed were used to grow vegetable. So, subsidies for hybrid seeds by VEGI project should not persist for more than the initial phase.

5.1.2 Recommendations for outcome 1

- In view of the sustainability of seed testing and releasing, it is advised to establish a thematic platform involving University/IPAS, MoFALI, business enterprises (such as Elite seed and others), MFARD, further stakeholders within the coming two years. At present, VEGI project assures a coordinating role in this domain, and it should assure that activities are continuing in a well-coordinated way even after the project ends. Such a platform could later evolve into a full-fledged PPP (Public-Private Partnership) with specific roles of the different stakeholders, e.g. MFARD as a convenor.
- Define a sustainable business plan for the seed reserve fund, adapt margin on seed sales, and re-define (reduce) subsidies for new seed varieties and hybrid seed.
- Extend the presently limited activities of the SRF and address all stakeholders of the vegetable seed domain, provide services to seed producers and promote innovations and GAP. In cooperation with MoFALI, develop binding quality standards for seed production and seed marketing. (For more details refer to annex 8 “From SRF to a Sustainable Seed Network”).
- In cooperation with MoFALI and banks, develop a micro credit programme with flexible collateral requirements, lowest interest rate, and guarantee from Government for collaterals for the vegetable sector.
- Intensify accessibility of mechanized equipment for vegetable production, support local production of easy to use and cheap equipment made by local engineers, support local know-how to contribute indirectly to reducing poverty and unemployment.
- Encourage and support the development of seed cooperatives with common policy, quality standards, branding and sales network, coordinated by the SRF and MFARD.
- Increase the role and contribution of local government for establishing a sustainable seed network (encourage local level agriculture specialists and agronomists).
- Use early matured varieties for timely and early marketing when price is highest.
- Check the suitability of an insurance for the seed stock of the seed reserve fund, based on an inspection of specialists (risk of loss due to fire, flood, theft, or other calamities).

5.2 Outcome 2: Marketing

In the domain of marketing, VEGI project plays strictly a facilitating role and does not invest in marketing infrastructure. This might explain, why the implementation of the programme is below the budget (2016: 50% of the budget spent; 2017/II: 5% (2017/III: 24%) of the budget spent).

VEGI in cooperation with SECIM II has launched preparatory works for a renewal of the wholesale market system in UB (bars market): Two study tours to Korea with participants of all relevant stakeholder groups (MoFALI, City Administration, Mongolian Development Bank,

MFARD, and business people studied the GARAK wholesale market system in Seoul and concluded to go ahead with an analogous market in Ulaan Baatar, expected to be realized within the coming 2-4 years.

In the vegetable growing Soums and Aimags, MFARD and SECIM II initiated platform meetings among marketing stakeholders with the goal to create a better understanding and cooperation between vegetable market stakeholders, especially farmers, buyer organizations, storage companies and local government. VEGI project supports through defining the needs and concerns of each stakeholder and through suggesting and facilitating cooperation options. A vegetable collection and distribution centre with temporary storage capacity and delivery service is planned with Selenge market as a pilot project.

There are several local initiatives for more profitable marketing, partly supported by the project. Atriin shim Company in Zuunmod sets new standards in direct marketing (packaging and branding) and demonstrates that much better prices are possible. In Zuunkharaa, the local government rents out common storage room to farmers for cabbage and potatoes for 6'000MNT/to. In Bornuur, a common storage room exists next to the extension centre.

MFARD provides market information to farmers on its website and via SMS, based on data delivered by SICA, a private market analyst company. In order to make this service sustainable and market oriented, MFARD and SICA could develop an information system, where farmers directly subscribe for SICA services without active involvement of MFARD.

In regard to processing, quality and branding plays an essential role to be successful on the market. The MTR team would like to put a question mark to the support of too small units at small farmer household level. Small (semi-) industrial units with quality control and attractive branding might be more successful on the market. Products processed at household level without a clear brand often fetch only marginal prices.

Branding of local products is a first step and can be done with today's certification system by Aimag and Soum agronomists. Branding organic production needs a more elaborate certification system than geographical indication. To promote organic production immediately, social media could play a decisive role in installing a market for organic production (direct links between producers and consumers).

In order to enhance the farmers' understanding of marketing issues in the vegetable value chain, MFARD should further develop value chain models that help to perceive mechanisms of the market: Marketing steps from the producer to the consumer with all involved actors, including the regulatory framework (such as rules, regulations, standards for quality, grading, pesticide residues, etc.) and the supporting functions (such as market information, (micro-) credit schemes, public relations, etc.). Basic value chain models to be further developed are presented in the last chapter of this report.

Public entities, such as schools, kindergartens, hospitals, etc. are obliged to respect existing tender laws of the government with the result, that most often, they have to buy imported food***. In cooperation with outcome 4, VEGI project should try to change the tender law to foster local direct sale agreements between producers and local public & government entities***.

5.2.1 Specific topic: Cooperation between Farmers' Cooperatives and private sector

To assess progress in outcome 2 particularly on the collaboration between farmer's cooperatives and associations and the private sector especially in storage, packaging and marketing. Make recommendations on how to improve this collaboration and to scale up best practices.

Verify whether the assumptions and scenarios made in the cost benefit analysis were realistic and are still valid.

Cooperatives: Strategy of MFARD to support cooperatives to build up on voluntary basis is convincing: Start with small and beneficial units with motivated members and fast convincing results. In collaboration with an external consultant, VEGI project supports the cooperatives in management, marketing, sales, storage and processing issues. A business plan competition contributes the cooperatives to be proactive, competitive and sustainable.

A cabbage farmer in Zuunkharaa states: "I harvested 35 tn of cabbage. If I sold it right after harvest in October, I would earn 17million Tugrik; if I store it till December, I will get 25 million Tugrik. The storage costs are 35x6'000 =210'000 plus other costs, maybe 2 million costs. So I gain at least 6 million. That would be even worth a membership fee of 50'000-120'000 Tugrik". This farmer is member of MFARD and of the local cooperative, and he is convinced, that storing in the public storehouse is the good strategy for him and his colleagues. Cooperatives must become attractive to farmers. By nature, farmers are reluctant to group with others; they must learn to see and experience the advantage of working together.
In Zuunkharaa, out of 1'200 farmers 25 are organized in a cooperative. They have different clients. The farmers get paid by the cooperative, when the customers have paid. Wholesaler pay within days; supermarkets after sales, and they apply deduction for bad quality. The establishment of a well running cooperative needs 2-3 years.

The cooperative in Bornuur Soum was established in 2017 (13 members). The low harvest in 2017 made the start difficult.

MFARD helped to establish concrete marketing contracts such as the agreement between Zuunkharaa local administration and farmers for the vegetable storage, or the production contracts between cabbage producers and Delta Company in 2016. However in 2017, these negotiations failed due to too low price offered by Delta Company. ***This example shows, that price building mechanism start to work. MFARD could become more active in this domain.***

The Cost Benefit Analysis (CBA1) in the Prodoc annex has been verified and assessed with available figures during the MTR. The assumptions for CBA 1 seem to be rather realistic and do not need major changes. MFARD to continue monitoring and verifying available figures. Detailed comments on CBA 1 are made in annex 6 of the MTR report.

5.2.2 Recommendations for outcome 2:

- Continue developing standards for marketing of quality products.
- Continue negotiation on establishment of wholesale market in UB.
- Intensify platform discussions to establish sustainable sales networks, and to develop direct sales channels with wholesalers and retailers (marketing and sales activities with Nomin, Minii, Orgil, Good price, Emart, etc. supermarket chains, online order and sale, direct sales agreement with public and private organizations, etc.).
- Establish extension centre in Zuunmod in cooperation with Atriin shim greenhouse farm and use it to foster marketing strategies.
- Continue capacity building of cooperatives, improve business management skills. Support cooperatives in developing marketing strategies, business planning, brand management, using social media for marketing of organic production, establishing common standards, improved packaging, sustainable sales channel, and attractive specific marketing tools as key factors for successful cooperatives. Foster supportive policy for cooperatives who are open for small (poor household) farmers as members.

- Launch and intensify marketing and PR activities to introduce newly established marketing & sales cooperatives to market stakeholders using social media platforms and cooperating with media (TV channels).
- MFARD and MWFA are encouraged to innovate, extend and intensify marketing activities while improving cooperation and negotiations with stakeholders, partners and subcontractors. Additional marketing and management skills could be hired from other organizations or NGO's who are experienced in marketing.

5.3 Outcome 3: Vegetable production and consumption in poor households

Till date, nine model streets are realized (about 150-200 households). This corresponds to 0.1% to 0.2% of all ger households (assumption 650'000 people living in UB ger districts = 100'000-150'000 households).

Budget expenditure for outcome 3 is behind schedule: 2016: 71%; 2017/II: 34% (2017/III: 59%) of the budget spent.

The results, presented by an enthusiastic women group are remarkable: They are very proud about their open field and greenhouse vegetable production. One women installed a store room in the basement of her ger; a group of women are in process to construct a house for joint processing of vegetable and for sewing during off-season. The women put emphasis on the fact, that vegetable gardening has induced a very positive social effect (more active interaction among ger dwellers in street). Learning and capacity building are perceived as additional valuable assets contributing to self-assuredness.

The model streets seem to be attractive: The agricultural office of UB city administration received 50 demands for the same approach by other streets. Several families bought a greenhouse with the MoFALI credit scheme (4 years). This also is a clear sign of interest.

However, there are some doubts about the effectiveness and sustainability: VEGI project is pulling women too much with the high subsidies (seeds for free, greenhouses 90% subsidies, irrigation >80% subsidies, equipment for free (hand tools) and even a small motor cultivator in one model street given as award in the frame of a competition). Based on the interviews held in the model streets and on experience of similar approaches, assumingly only 30-40% of women are motivated (producing vegetables, acting as trainers for newcomers), 60-70% feel pushed to participate. How to deal with non-motivation, laziness? The very high rate of subsidies contains the risk of creating a "bottle-feeding" or "incubator" mentality.

Continuous monitoring of the model streets needs to be done in the coming years to check the sustainability of the approach.

UB city expects a water crisis towards the year 2040. This provokes the question whether water for irrigation in the ger districts would be available. So far, there is no analysis made about the water availability, if groundwater wells were propagated at large scale. Also the risk of salinization is an open issue to be checked in time.

The model approach (model streets with extension points) is in the same time convincing and critical. Convincing, because it demonstrates a concrete way of doing it and activates local stakeholders actively; critical, because subsidies (directly paid material, free advice, free negotiation with other stakeholders, free training, etc.) are not a sustainable pattern. Without project support, it is not realistic to copy the model. ***Alternative approaches based on microcredit schemes need be developed and tested. MFARD and MWFA need to challenge local government's strategy of agriculture sector for the continuation of the ger vegetable promotion.*** Without a strong involvement of the local government, the project initiation including the model street extension points risk to fall asleep.

Evaluations of poverty oriented programmes tell us a lesson: Own money = hot money; subsidies and grants = cold money. The colder the money, the smaller the chance of a sustainable result – the hotter the money, the bigger are chances for success. MTR suggests to lift the responsibility of the ger dwellers by substituting subsidies through a credit system; a possible model exists with the MoFALI credits for greenhouses. ***Follow the slogan: "Fostering entrepreneurial spirit to get out of poverty".***

Processing in ger should not be subsidized. If women are doing it at own costs, it is a sign of entrepreneurial spirit. Processing for home consumption might be more realistic than for marketing. However, exploring the local market might show niches. With proper branding, it will be possible to fetch good prices. Also local schools and kindergartens might be good clients.

Vegetable gardens in schools and kindergartens: ***In future, shift from demonstration to competition among students' groups***. Involving TV or parents' committee in evaluation might have good PR effects, raise awareness and support the transfer of knowledge to household level. In the frame of the activities of outcome 3, entertaining, encouraging, colourful, attractive campaigns and marketing PR activities should be organized by MWFA focused on getting the awareness of the young generation. In sight of MWFA's limited capacity and experience in organizing such children focused entertaining events, MWFA is encouraged to cooperate with experienced children organizations and NGO's. Supportive cooperation by media groups / TV's could have a big impact for the society and especially the young generation.

The Prodoc of VEGI project contains a Cost Benefit Analysis (CBA) of the outcome 3. This CBA differs from the original CBA developed by the consultants. The figures presented in the CBA of the Prodoc contains some errors (number of greenhouses). Therefore, the comments in this report refer to the original version of the CBA for outcome 3, which is attached in annex 6 of this report.

Comments on CBA 2 (outcome 3) are made in detail in annex 6. As a summery we can state here that the assumptions made for the ex-ante calculation of the CBA have been made rather optimistically. The assumed yields are possible in Mongolia, but rather under professional conditions than in a ger district. The real farm gate prizes at harvest are for sure below the assumed levels. Also the number of actively involved families is smaller than planned. It is too early to re-calculate the CBA. However, based on the corrected parameters, the CBA might be less positive or even negative.
On the other hand, as stated in the Prodoc, the CBA tells only something about economy. It does not include other effects of the project activities under this outcome, such as improved knowledge by ger dwellers, social effects among neighbours, change in entrepreneurial spirit, etc. These are all positive side effects that need to be taken into account when assessing the project. Finally the question remains: What do we want to prove with the CBA? The fact that money has been invested meaningfully? In the case of VEGI project, we have the strong impression that money has been and continues to be invested diligently.
MFARD should continue monitoring all relevant data to check the CBA at project end.

5.3.1 Specific topic: Promotion of vegetable production in the GER districts

To assess the progress of outcome 3 in the promotion of vegetable production in the GER district of UB, and provide recommendations for SDC whether this component should be extended as initially planned in 2018 to the GER districts of Darkhan and Erdenet. In this case, provide recommendations on the implementation modalities of this component in those cities.

The "package approach" (common (irrigation) and private (greenhouse) infrastructure, training and knowledge exchange, support by Khoroo administration) is both, learning and action oriented. The benefits women state are threefold: (1) vegetable production (self-consumption /

gifts for neighbours and friends / sales); (2) gain of knowledge, experience and self-confidence; (3) community development (social contacts, common projects, e.g. processing, tailoring).

The unequal distribution of material and infrastructure (only to selected model streets, subsidized to 85-90%) might be a critical trap for the programme; other streets are waiting for the gifts to arrive at their door.

Regarding the extension of the programme to Darkhan and Erdenet, there are some pros and cons. Pros: Setting an example what can be done in ger districts in other cities. Cons: In Darkhan, many projects with the same purpose have been implementing their activities for the last 15 years. Erdenet city is more focused on mining and somehow a wealthy region; the unemployment rate is much lower than in UB, and vegetables are cheaper than in UB, so people can buy vegetables. Extension of the programme in UB is more cost effective (no or lesser transport costs).

Conclusion: MTR team does not recommend to replicate the same approach in Darkhan and Erdenet. As an alternative to the subsidized approach, we suggest to define a realistic, sustainable and replicable co-financing strategy right from the beginning. Follow a business oriented approach with micro-credit. Organize a study tour for ger mayors and representative dwellers from Darkhan and Erdenet to UB to visit model streets, and involve them in developing the suggested alternative approach. ***The example is set; MFARD should go for the next step and develop a consolidated approach that can be implemented even after the project ends.*** Check, whether MFARD branches are sufficiently strong units to backstop a programme in ger districts.

5.3.2 Recommendations for outcome 3

- Re-design the whole vegetable production scheme in ger districts based on micro-credit and self-financing. Make use of social control within khoroos by limiting the total amount of micro-credits in one khoroo. Whenever part of outstanding credits are paid back, new credits for the next street of the same khoroo will be accessible. Such micro-credit schemes with a social control have shown to be successful in many countries. Check public (water management) and private (vegetable production) interest in this scheme, and try to define balanced solutions with contributions from khoroo administration and private ger dwellers.
- Analyse carefully the groundwater resources and irrigation system (water saving, simple and eco-friendly technologies, such as collecting rain water, drip irrigation, plastic covering to prevent from excessive evaporation, etc. instead of watering with the hose). Check options to connect to the public water supply.
- Put a stronger focus on home consumption, health and household financial management skills in training and advisory services.
- Continue training in vegetable production with women that are interested and willing in continuing this activity. Use the FFS (Farmer Field School) approach to organize training and knowledge exchange in the ger districts.
- Schools and Kindergartens: Shift from demonstration to competition among students' groups, attractive, entertaining, encouraging marketing and PR actions for raising awareness among parents and all kids, not only eco club kids.
- Processing support: Concentrate on home consumption and – if desired – local marketing; raise food security concerns (requirements of processing in small factory, health issues).
- Check feasibility of permaculture design and organic farming technology teaching and showing examples of eco solutions for household farming system providing knowledge how to use local resources.

5.4 Outcome 4: Policy / legal & institutional framework

The programme in outcome 4 started late due to personnel changes in FAO office in UB. A first result is visible in the half yearly report that sets the law revision in an international frame. This provides a good basis for further analysis.

The implementation of programme is delayed and below plan; in the first 1.5 (out of 4 years), only 12% of budget have been spent.

When analysing the logical framework of the project, it is not really clear why output 4.3 (ToT and FFS) are under outcome 4 and not under outcome 1. Training of Trainers and Farmer Field School on the topic of Integrated Pest Management and Organic Production are production oriented activities and have a stronger link to outcome 1 than to outcome 4, although, of course, they are somehow the practical implementation of the law and by-laws on organic food. VEGI project must make sure, these ToT and FFS activities are well coordinated with other training activities under outcome 1.

A working group with representatives of MoFALI, SECIM, VEGI, General Agency for Specialized Inspection (GASI), Inspection Agency for Capital City, and specialized consultants are actively revising sixty standards for vegetable production and marketing.

5.4.1 Specific topic: Legal and institutional assessment

To assess the progress made in outcome 4 and verify whether the legal and institutional assessment identified the relevant topics to be addressed in order to ensure a conducive environment for the sector support.

The late start of the programme did not allow lots of already visible results. Furthermore, change processes for laws, by-laws and regulations normally are time demanding (2 to 4 years are a minimum).

The FAO consultant has been setting the frame with the inventory and analysis of the international legal situation. Priorities for law adaptations are roughly set, but there is no concrete action plan with priorities. During the interviews, several issues for revision of legislation and regulation have been raised by different stakeholders:

The Research Station (IPAS) suggests: Varietal protection, price regulation, control on pesticides, re-structuring agriculture and education (now, research – as part of the Mongolian State University of Life Science – is under Ministry of Education, Culture and Science and not under MoFALI). ***Define variety testing, seed production and potato mini-tuber production*** *(at present the in-country production is only 50% of demand)* ***as strategic issues for food security.***

Procurement of food for schools and kindergartens are subject to the tender law with the effect that most foodstuff is from import. Tender rules need to be revised and adapted in order to make it possible that public units (schools, kindergartens, hospitals, military canteens, etc.) can buy their foodstuff from local markets.

The MTR identified a series of needs for adapting the legal base: (1) Standards for organic vegetable production, labelling and certification; (2) Food safety (residues of pesticides); (3) Price policy, import regulation; (4) Cooperative Law (ease the rules for agricultural cooperatives to make it manageable for farmers); (5) Seed multiplication and varietal approval; (6) Crop Law; (7) Integrated Pest Management (IPM), Good Agriculture Practices (GAP), promotion of organic production; (8) Agricultural extension and capacity building.

For analysing, development and revision of law and regulation, FAO might consider to hire more subcontractors and consultants to have quick results and make a realistic changes.

5.4.2 Recommendation for outcome 4

- **Develop an action plan** for outcome 4 in more detail. Define “priority construction sites” such as (in order of suggested priority):
  (1) seed multiplication and varietal approval, include seed reserve fund into seed law
  (2) adapt tender rules to make it possible that public units (schools, kindergartens, hospitals, military canteens) can buy from local market
  (3) develop by-laws for organic production (labelling and certification), food safety (integrated pest management, residues of pesticides), GAP
  (4) cooperative law (ease the rules for agricultural cooperatives to make it manageable for farmers)
  (5) review agricultural extension and capacity building, especially for young generation and develop a motivation policy
  (6) review price policy and import regulation to reduce the risk of price fluctuation during harvesting season, to control price floor and ceiling based on operational cost of the year
  (7) review the crop law and determine what chapters need adaptations for the vegetable sector
- To develop by-laws and standards, a **stronger coordination** and exchange between FAO and MFARD is needed. Refer to thematic agricultural-platforms in Switzerland, where representatives from research, extension, administration, farmer union, private business are negotiating new regulations and cooperation patterns in all different domains of agriculture and livestock.
- **Implement** new laws and regulations: More active, realistic and motivating actions, campaigns and PR have to be taken to implement the laws and regulations. For this purpose the project needs to work and implement PR campaigns with media agencies such as Mongolian National Broadcasting channel TV etc.
- **Train** all MFARD branches heads, main farmers, and agronomists in basic knowledge of legislation and regulation; support them to spread needed information and changes in regulation to all farmers in the region and target beneficiaries; make best use of agronomists, project coordinators, and NGO staff as trainers.
- **Work with sub-contractors** for selected topics providing funding from project.

6 Further issues to be considered

6.1 Food safety: Integrated production and organic agriculture

Many people say that 50% of the Mongolian vegetable production is organically produced. But where is the boundary between organically produced and production using chemical fertilizer and pesticides in the absence of regulations, certification, inspection and systematic food analysis? In Mongolia regulation on organic production is just emerging (Law on Organic Food has been adopted in 2016); professional organizations for certification of organic products do not exist, neither do strong consumer organizations of organizations of organic producers.

A few NGO's such as Organic Mongolia Program & Movement, MNNCI, MOGFA, etc., are dealing their activities for the last 10 years, focusing on raising public awareness, marketing and PR, developing organic legislation system in Mongolia, contributing for organic farming and food production development in practical level.

Three action lines for establishing a market for organic vegetables (and other organic products) in Mongolia are needed:
(1) Development and dissemination of production techniques and standards for organic production (organic seed, organic fertilizer, organic pest control, processing, labelling, branding).
(2) Based on the Organic Food Law and practical experience of producers, development of standards in by-laws and regulations and building up of an organic certification and inspection system (implementation of law and regulations).
(3) Branding of organic production by cooperatives and producers, and establishing marketing and sales channels for organic products.

According to MoFALI, organic standards are ready to be approved. The implementation of adopted laws and regulations will remain probably an even bigger hurdle than the establishment and revision of the legal framework. A special challenge will be improving the control of pesticides, from import of pesticides, through to correct application, processing and food analysis on vegetable markets (to detect residues of pesticides).

6.2 Agricultural credit and micro-credit scheme

All along the discussions with stakeholders of the vegetable value chain, one topic appeared again and again: Credit and supportive financial policy for the agricultural sector.

The seed reserve Fund has been created to assure a secure and economically stabilized seed market. A big issue within the seed reserve fund is the pre-payment to seed growers keeping in mind the long investment period for seed production (2 years), and the credit scheme applied for farmers using the seed. When speaking about farm equipment, the topic credit is re-appearing, again in discussions about storage, again in discussions on attracting young people to become agricultural entrepreneurs, and again in the ger districts for irrigation, greenhouse and purchase of seeds. Credit and financial support and fair interest rates are omnipresent key-words in almost all discussions.

Also in other countries, agricultural credits are in high demand. Mongolia is not an exception in this respect. But Mongolia is an exception in the fact, that there is no agricultural credit available. ***Based on the fact, that agricultural credits are in demand at all levels, we suggest that VEGI is investing energy in setting up a platform for actively creating concrete offers by the banking system.*** For sure, there are many more projects, organizations, institutions, business, and Ministries interested (or challenged) in this issue.

The following financial products have been stated as a need by different interview partners:

- Micro credits for small farmers and ger dwellers (irrigation, greenhouse, equipment, seed costs)
- Agricultural credit for small to medium size farmers for equipment, machinery, seed, seed production, fertilizer and other agricultural inputs
- Start-up credit for young farmers willing to start agricultural enterprise, based on solid business plans
- Short term credits to bridge financial needs right after harvest season (school fees, etc. to be paid right after harvest) to allow later sale of produce to a better price
- Other products, still to be defined

Essential issues to be cleared, are (1) Access to credit based on solid business plans; (2) Lowest interest rates; (3) Credit duration according to seasonal needs); (4) Realistic and reasonable collateral requirements; (5) Risk insurance integrated in credit system.

Prior experience with micro credit scheme has been made by Organic Mongolia Micro Financial Programme in cooperation with MNCCI (Mongolian National Chamber of Commerce and Industry), HASBANK and Capital Bank.

In addition, the Government might check following issues to make vegetable farming attractive: (1) University fee discount for agricultural students, (2) Tax reduction for young farmers and enterprises employing young farmers, (3) Adaptation of the social insurance system to the needs and possibilities of farmers and farm labourers.

6.3 Extension of project period, consolidation phase 2020-2023

The official ProDoc of the VEGI project contains an open issue: In the executive summary, the Prodoc states clearly: “The inclusive and sustainable vegetable and marketing project (VEGI) is planned for two phases, the first implementation phase from 01.02.2016 to 31.12.2019 and the second consolidation phase from 01.01.2020 to 31.12.2022.” In the main part of the Prodoc, only the first phase from 01.02.2016 to 31.12.2019 is taken into further consideration. MTR team interprets this fact that there is room for discussion. Here some arguments:

Life span of an agricultural value chain development project: Considering the experience of the potato project, a total project duration for the establishment of a sustainable value chain of agricultural products of 10 to 12 years is not only realistic, but a must. The VEGI projected started as a side branch in 2012 within the potato project. Hence, VEGI project had a first inception phase from 2012 to 2015. The present implementation phase lasts from 2016 to 2019. Including the consolidation phase earmarked in the executive summary of the Prodoc from 2020 to 2022, the total project duration would sum up to 11 years, what makes sense.

Budget and actual expenditure: At present, the VEGI project has not spent the budget provisions for 2016/17 (2016: 71% of the annual budget; 2017/II: 33% (2017/III: 52%) of the annual budget). A more comprehensive evaluation can be done at the end of 2017. The MTR team is of the opinion, that this under-expenditure is not a sign of poor project steering or ineffectiveness, but much more a sign of diligent budget management; money has been spent for well justified activities. This under-expenditure creates room for an extension of the project activities, not in quantity, but in quality and in time to consolidate action lines and to make procedures even more self-standing, independent from project structure and financial resources, and thus contributing to sustainability of so far reached results.

Adaptation of the legal framework: As explained earlier: Law adaptation takes time! The fact that Mongolia has opted for a clear positioning of organic production in its agricultural and food security policy is a strong reason to accompany this process through the coming years.

VEGI project rationale: Furthermore, among staff of VEGI project, the perception is clearly focused on a time horizon of 2022; many action lines, like (1) seed reserve fund to get fully sustainable, (2) extension centres to develop sustainable business models, (3) wholesale market and vegetable collection points to be installed, (4) ger micro-credit schemes to replicate models in an adapted manner, (5) promotion of organic production and consumption of vegetables, (6) cooperatives getting a stronger position on the market, etc.), all these action lines are designed for a development process over the coming four to six years.

All these arguments speak clearly for an extension of the project duration in form of a consolidation phase from 2020 to 2022 (or 2023).

7 Recommendations

To make recommendations to improve the poverty focus, the gender equality mainstreaming and the sustainability of the project results and the sustainability of the implementing organisations, such as the MFARD.

Outcome specific recommendations are made in the respective chapters in detail. In this chapter we resume the main recommendations addressed to MFARD and SDC.

7.1 Recommendations to MFARD

- Maintain the facilitating role of the project (connecting other players of the vegetable value chain). Disengage more and more from direct implementation and subsidies (leave the driving seat to other stakeholders!). Linked activities with stakeholders are very important and urgent focus of Outcome 2.
- Develop the seed reserve fund to make it full self-supporting and sustainable (define a business plan and verify its implementation on annual basis).
- Continue cooperation for the establishment of a structured wholesale market and vegetable collection points in UB and Aimag / Soum centres.
- Contribute to the development of an agricultural (micro-) credit programme for the vegetable (and crop) sector in cooperation with MoFALI, banks, business entities, other projects, and NGOs.
- Develop alternative approaches to model streets, permaculture designed household gardens, organic agro-technologies, improvement on consumption knowledge of vegetables, based on micro credit schemes still to be developed and tested. In cooperation with FAO, develop a FFS training system for ger districts.
- Support model extension centres in the development of business plans in order to enhance their self-financing capacity and thus their sustainability.
- Maintain the training and consultancy service for cooperatives to contribute to their autonomy as full-fledged market player.
- Keep the monitoring slim and effective. Use photo monitoring and video documentation for steering and PR (consider cooperation with MOGFA or other experienced organization).
- Re-allocate budgets for the implementation of the programme 2018/19 according to the adopted recommendations.
- In cooperation with FAO: Continue the support for revision of the legal framework. Set priorities! Cooperate with external experts, if indicated.

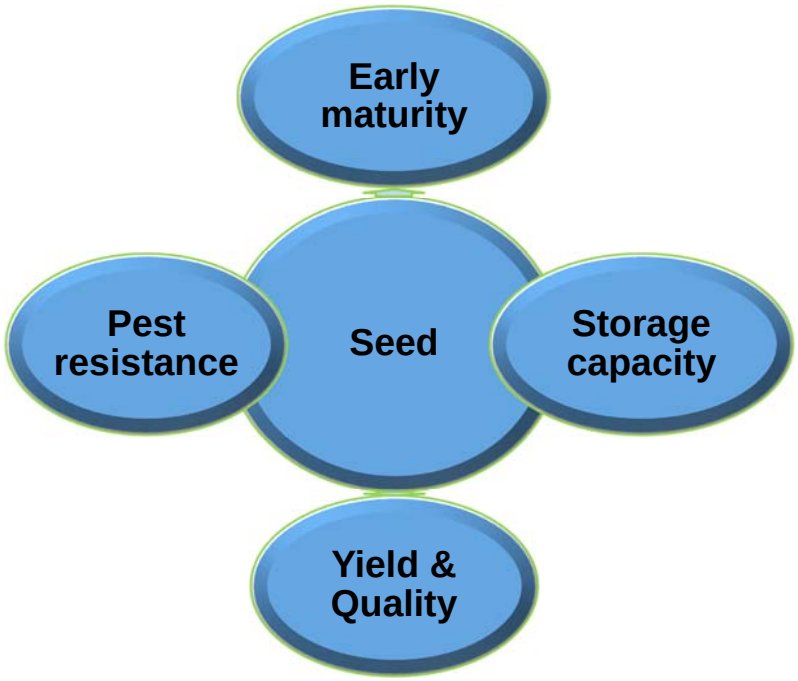
7.2 Recommendations to SDC

- Go for a third project phase 2020 - 2022 with emphasis on consolidation of successful action lines within the stakeholder network of the vegetable stakeholder market. Transfer the non-used budget to the next phase and add necessary budgets for the last phase.
- Check re-allocation of budget positions for the coming two years together with MFARD management.
- Support the creation of agricultural credit scheme in coordination with needs of other projects in rural areas. Act as a platform convener.

8 Graphics, schemes, visualizations

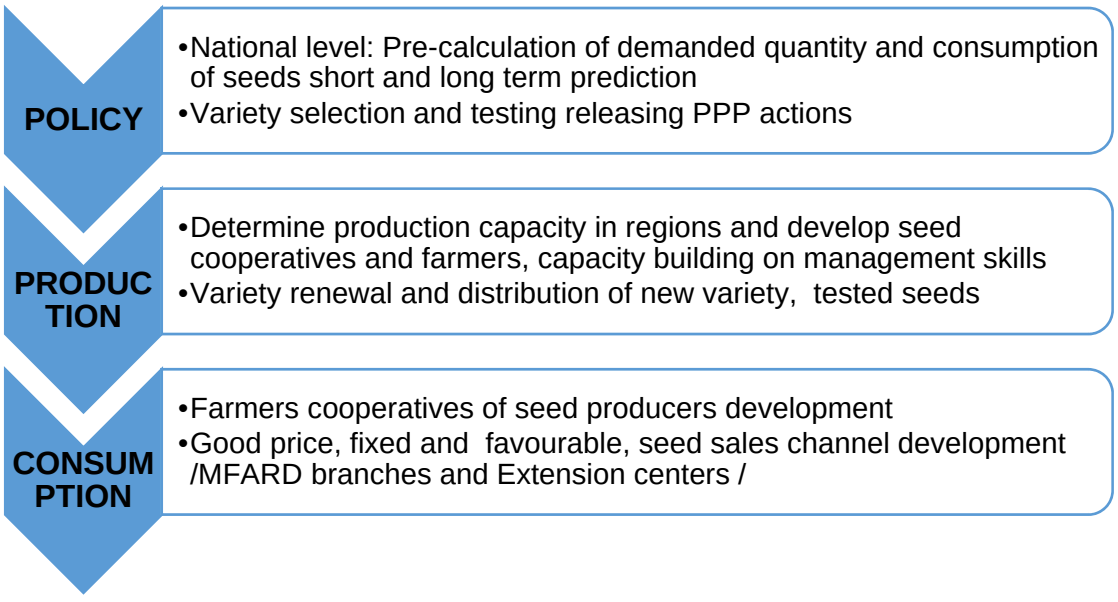
In this chapter we resume some useful graphics and models, sequenced according to the four outcomes of the VEGI project. We think, they might support VEGI staff in their training, communication and negotiation activities.

8.1 Main Criteria's of Choosing Seed Variety for Multiplication (outcome 1)



8.2 Government Policy of Seed Variety and Distribution (outcome 1)

Supportive actions focus: Seed market development contribution from Government MoFALI



8.3 Value Chain Models (outcome 2)

In order to develop a better understanding of value chains and market mechanisms including their frame conditions, value chain models need to be brought to the level of farmers and co-operatives. Three examples are shown here: (1) A general market model with rules and supporting functions (SDC DFID); (2) The Mongolian model for cabbage, onions and carrots (Epars); (3) general Mongolian model (MMCG Mongolian Marketing Consulting Group).

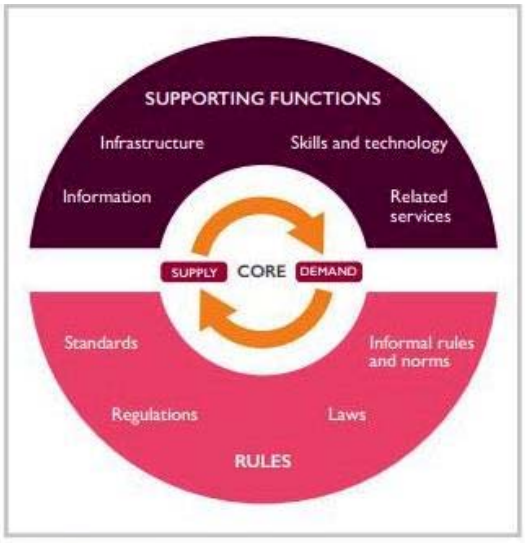


Figure 1: The market system

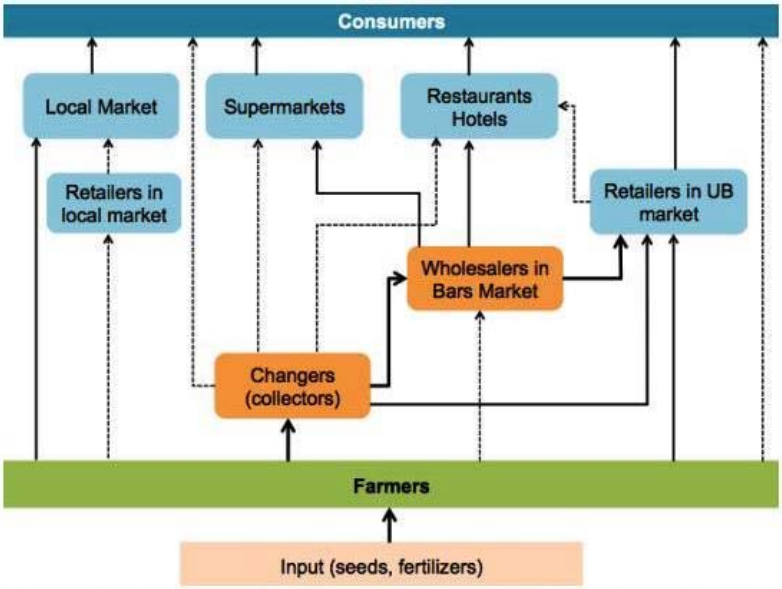
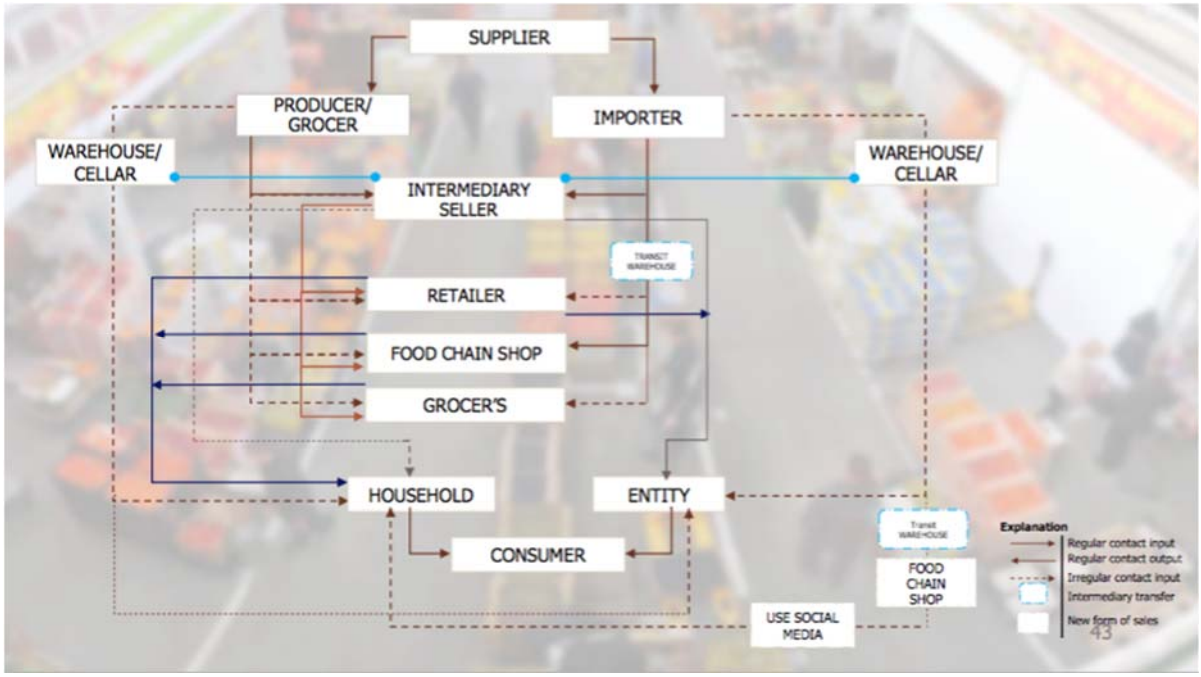


Figure 15: Value chain map of cabbage, carrots and onions: thicker arrows show the biggest flow of product and the dotted line show the minim flow.



8.4 Marketing Strategy Recommendation (outcome 2)

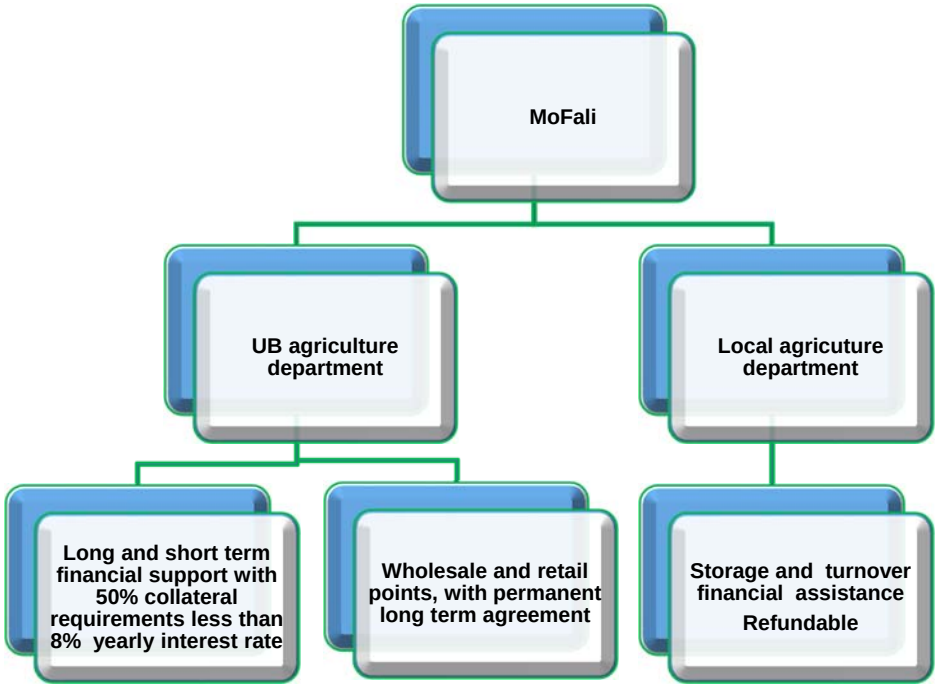
- ✓ *Main marketing partners for the project: Processing companies, national producers, food service and sales chains*
- ✓ *DEMAND and CONSUMPTION FOCUSED*
- ✓ *VEGI project - BRANDING – BRAND VEGETABLES (Special variety, special taste special appearance), processed BRAND PRODUCT, Sustainable branding and supply*
- ✓ ***BRANDING: Examples of establishing VALUE CHAIN of VEGETABLE MARKET***
  ***TOMATO**: Special variety - Tomato - Tomato juice - Tomato sauce*
  ***ORGANIC POTATO** – Potato chips – Potato for direct use cleaned chopped*
  ***CARROT** – Cleaned and Chopped carrot – Carrot juice - Dried carrot - Carrot powder*
  ***CARLIC**: Special type of Fresh garlic (red skinned etc.) - Garlic powder – Garlic extract*

SALES and MARKETING NETWORK:

MOST POWERFUL SUPERMARKET CHAINS IN MONGOLIA: Minii, and NOMIN
Long term Collaboration and strategy harmonization with those stakeholders, logistic marketing policy relevance is very important issue for the VEGI project.

RESTAURANTS: Main purchasers of vegetables are restaurants. While establishing good cooperation with them, it will be a good chance for permanent consumption and sustainable supply of vegetables with negotiable price for project beneficiaries. If logistic is solved with the cooperation TAXI leading companies, distribution problems will be solved.

8.5 Government (MoFALI) Supportive Financial Policy for Long Term Sustainability of Farmers (outcome 2)

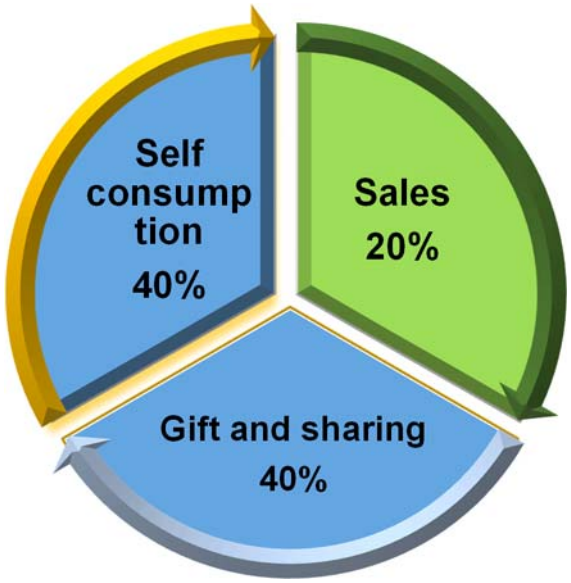


8.6 Key Factors of Sustainable Vegetable Production in Ger Districts (outcome 3)

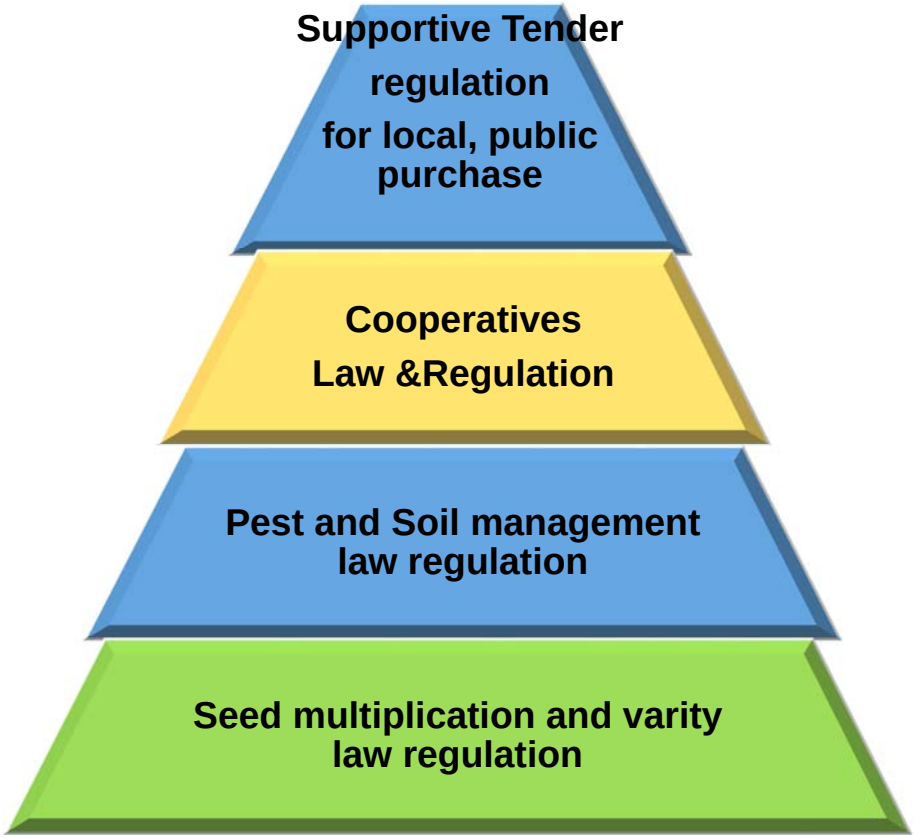
8.7 Current status of households' income and production (outcome 3)

Example from UB model streets households: Each household's yearly income from first and second year differs between 150.000-300.000MNT, subsidised (invested) money from the project per each household 500.000-1.000.000 MNT.

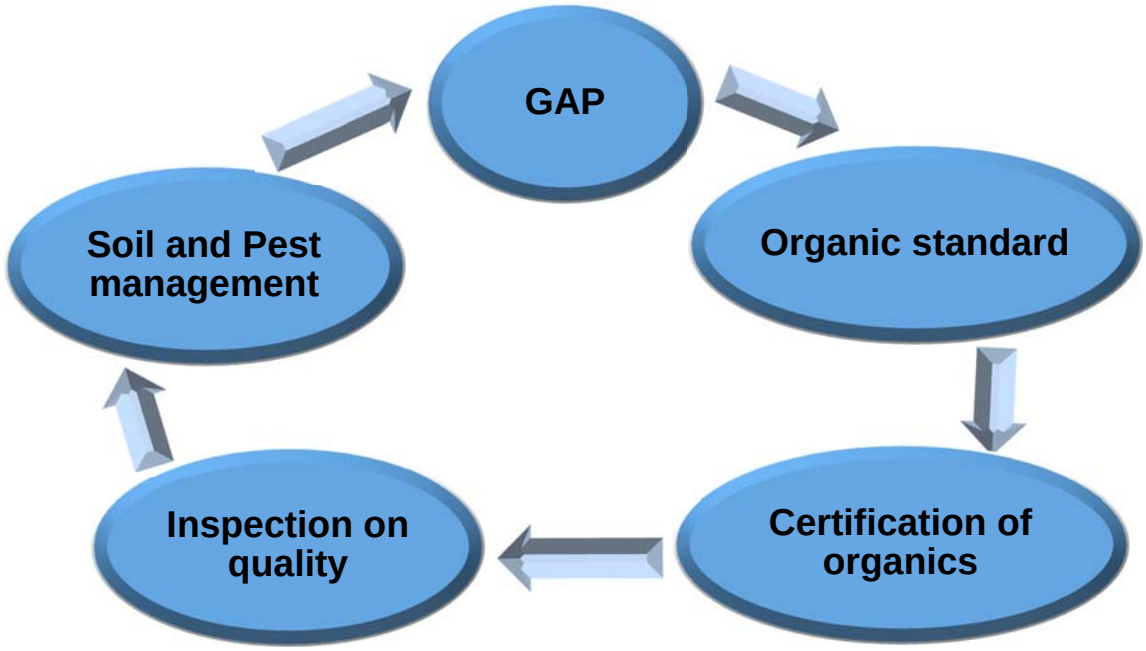
Future opportunities for households: To increase household income and sustainability of gardening: To grow early maturity vegies with high price, plant fruit trees, permaculture design, self-consumption processing and storage.



8.8 Priority of Legislation System Development & Urgency (outcome 4)



8.9 Food Security (outcome 4)



9 Annexes

(1) Monitoring sheet updated mid-2017, commented by SDC and MTR team
(2) Minutes of the stakeholder meeting (09 October 2017)
(3) Schedule of evaluation and persons met
(4) Terms of Reference of the MTR mission
(5) Sustainability recommendations for implementing organisations – MFARD
(6) Assessment of CBA (Cost Benefit Analysis) for outcome 1,2 & 4 and outcome 3
(7) Seed Reserve Fund Schedule
(8) From Seed Reserve Fund to Sustainable Seed Network

Project monitoring sheet 2017

Project:	Inclusive and sustainable vegetable production and marketing project		Total Annual Budget	MNT 2,975,181,937		
Phase Budget	MNT 8,800,000		Financial Delivery Rate as of 30. September (%)	55%		
Duration of Phase	15 Apr 2016-31 Dec 2019		Expected Financial delivery rate by the end of the year (%)	79%		
Monitoring period:	01. October 2016 - 30. September 2017					
Indicators	**Baseline/Target/ Target**	**Status and achievements (explain deviation from plan)**	**Analysis /comments**	**Operational Execution as per Annual workplan (%)**	**Financial delivery rate as per annual workplan (%)**	**Comments MTR team** --> Suggestions for change
Project Goal	**Improved livelihoods of vegetable growers through the inclusive, gender-balanced and sustainable growth of the vegetable sector**			**67%**	**55%**	The wording "through ..." describes (part of) the strategy in project goal; no need to state this in the project goal.
Economic	Baseline: ... (2016) Target: > 20% (2019)	**Result: 1,415,159** 2016: 1,415,159 MNT 2017: n/a yet	assessment will be done by end of the year 2017			With an annual inflation of >7%, the livelihood will not improve, but getting worse. --> The target should be 120% plus annual inflation rate of baseline value. Baseline value for 2016 = ? Annual inflation rate 2016: 1.1%..
Political (agreements as cooperative)	Baseline: ... (2016) Target: 10 (2019)	**Result: 1**	Farmer cooperative members made agreement to supply cabbage to Delta Holding LLC. Delta holding is expecting to receive 900 tn of cabbage from contracted farmers.			The marketing agreements of the cooperatives are indicators on outcome level. --> At the level of the project goal: Political and economical recognition of cooperatives as important market players
Social	collective actions	**Result: 9**	(1) technique and equipment renting out by all MFARD branch, (2) seed production by MFARD Uvs branch, (3) seed shop in 12 soums, (4) seed distribution system by MFARD in UB, (5) extension center in 3 soums, (6) marketing cooperative, (7) collective storage, (8) vegetable processing units, (9) model street in ger districts, (10) morning market in districts			These are output and outcome results. --> At the level of the project goal: Role of cooperatives and collective groups in production, storage, processing and marketing.
Human	access to water	**Result: 152 households have access to water from 9 new ground well**	152 households now have easy access to water from 9 ground well, which is potential for 360 households, in 3 districts of UB.			OK as indicator: (In this context, one question remains open: Will this approach be possible for all in the same ger district? What is the carriage capacity of ground water? Does a technical analysis exist?)
Security	access to storage	**Result: 9**	2 individual storages with total capacity of 280 ton and 6 collective storages with total capacity of 700 ton are supported and able to store cabbage, garlic, onion and greenhouse vegetables in some soums of Tuv, Selenge and Orkhon aimags.			This is an outcome indicator. --> At the level of the project goal: Decreasing dependence on import
Perception on livelihood is increasing	qualitative	**Result:** 2016: 2017: 80%	Trainings and advisory services are evaluated every time and average result of safisfactory is 80%			Does this indicator mean "People perceive their livelihood is improving"? If so, what is the beaseline value for 2016? For later years, a survey needs to be done, and not training and advisory work assessed.
Annual vegetable per capita consumption	Baseline: 58 kg (2013) Target: > 70 kg (2019)	**Result:** 2016: 49 kg 2017: tbd kg	result will be available by end of the year 2017			Ok as impact indicator. But where from do you get reliable data? Batzaya: Calculation is made based on total national harvest and imports, and population.
National vegetable area	Baseline: 8'700 (2014) Target: 10'500 (2019)	**Result: 8,512 ha tbd** 2016: 8,342 ha 2017 8,512 ha	In 2017, according to the statistics provided by MoFALI, planting area of vegetable is 8,512 ha as of June, 2017.			Ok as impact indicator.
Vegetable yield (kg/ha)	Baseline: 12 t/ha (2014) Target: > 15 t/ha % (2019)	**Result: 8.9 tbd** 2016: 14.3 t/ha 2017: 8.9 t/ha assumption as of Aug	As of end of August, 2017, the predicted yield of vegetable yield is 75,700 tn.			This indicator is ok as impact indicator, but it is heavily dependent of rainfall patterns (2017 rains came only in August; yield was very low). Rainfall patterns need to be considered, when analysing the data.
Outcome 1:	**Domestic vegetable production of farmers, is increased through better varieties, seeds, improved technology and available know-how**			**77%**	**63%**	The wording "through ..." describes (part of) the strategy within this outcome; no need to state this.
Indicator 1.1: Number of officially approved new varieties (cabbage, onion, carrots, turnips)	Baseline: 5 new varieties (2016) Target: 20 new varieties (2019)	**Result: 6+** 2016: 6 2017: N/A yet	Over 65 varieties of 17 vegetable species are being tested by specialized institutes. This year more emphasis was given to the testing of hybrids of cucumber for processing upon the request made from Association of greenhouse producers.			The indicator should include the availability of sufficient multiplied seed of these new varieties (in % of farmers' demand) Batzaya: it will take time (at least 2 years of time) to adopt seed multiplication of new varieties. Hence, better not to include
Indicator 1.2: Vegetable area in target region (ha)	Baseline: TBD (2016) Target: >20%(2019)	**Result:** 2016: 3,939 ha 2017: 3,222 ha	Vegetable area has been decreased by 18% in 2017 compared with previous year 2016 due to low price of vegetable in the market in 2016. Hence, marketing system of vegetable is still challanging in coming years.			Does this indicator mean "Increase bei 20% or more"? (2016: 100%; 2019: >120%) Batzaya: increase at least by 20% compared with year of 2015. How about change it only for main crops like cabbage and onion production area increased by 20%? --> Suggestion: Include the five main vegetable species.
Indicator 1.3: Production of vegetable in target region	Baseline: TBD (2016) Target: >20%(2019)	**Result:** 2016: 39,967 ton 2017: n/a	n/a, harvesting is on-going.			Does this indicator mean "Increase bei 20% or more"? (2016: 100%; 2019: >120%) Batzaya: same as above change to only cabbage and onion production? --> Suggestion: Include the five main vegetable species.
Output 1.1	**Qualified seeds are available locally**			**83%**	**29%**	
Indicator 1.1.1: Number of tested new varieties	Baseline: 5 (2016) Target: 40 (2019)	**Result: 6+** 2016: tested-71 approved-6 2017: tested-65 approved-N/A	Over 65 varieties of 17 vegetable species are being tested by specialized institutes. This year more emphasis was given to the testing of hybrids of cucumber for processing upon the request made from Association of greenhouse producers.	50%		(The number of tested varieties is only an internal indicator for the researchers and tells sth. about the pre-selection process.) --> "Available quantity of multiplied seeds of newly released varieties in seed shops" or --> "Number of approved varieties".
Indicator 1.1.2: Domestic seed production of main vegetable species, in % of demand	Baseline: 60% /2015/ Target: 80% (2019)	**Result: 100%** 2016: 80% 2017: 100%	Licensed vegetable seed producers from MFARD branch in Uvs aimag were able to supply about 100% of seeds for the main vegetable crops, such as carrot, beetroot and turnip for the seed demand of 2017 planting season.	100%		Suggestion: --> Specify "of the 5 main species (cabbage, turnip, carrot, beet root, onion)"

Indicator 1.1.3: Number of species for which seeds are locally produced	Baseline: 6 (2016) Target: 10 (2019)	**Result: 9** 2016: 7 crops 2017: 2 crops	Cabbage, turnip, carrot, onion, garlic, spring onion, beet root, open field cucumber and tomato (9) seeds are now locally produced.	100%		Ok.
Output 1.2	**Improved technologies are applied to vegetable production**			**67%**	**70%**	
Indicator 1.2.1: Increased area of greenhouses in target region	Baseline: TBD (2016) Target: > 10% **BL survey data 61,888.5m²*	**Result: 11%** 2016: 3,104m² /5%/ 2017: 3,824m² /5.9%/	10 units of 120m2 and 45 units of 32m2 plastic greenhouses were distributed to 25 soums in 16 aimags in order to improve protected greenhouse practices and increase tomato and cucumber production.	100%		Does this indicator mean "Increase bei 10% or more"? (2016: 100%; 2019: >110%)
Indicator 1.2.2: Increased irrigated area in target region	Baseline: TBD (2016) Target: > 10%	**Result: 0**	n/a this indicator should be reviewed by MTR	0%		Irrigation is not a project activity. --> Delete this indicator.
Indicator 1.2.3: New technologies tested and disseminated	Baseline: 0 (2016) Target: 5 (2019)	**Result: 8** 2016:4 2017:4	(1) Automated ventilation system with temperature sensor for plastic greenhouse is being tested in order to prevent from greenhouse overheating. (2) In collaboration with Research Institute of Plant Protection RIPP, 8 new herbicides, fungicides and insecticides on cabbage and turnip has been tested. (3) 3 set of a four row onion set planter, locally designed, for a 25hp mini-tractor tested in 3 agricultural extension centers in soums. (4) 27 small scale plant nursing tools for mini-tractors, hand driven planters, cultivators and other tools were supplied to the vegetable producers. These equipment will serve on rent basis for all soum vegetable growers.	100%		Maybe it is more interesting to know, whether farmers apply new technologies: --> "… and applied successfully by at least 10 farmers in each region of target area with extension centre (Bornuur, Zuunkharaa, Orkhon)".
Output 1.3	**Knowledge is transferred to farmers**			**80%**	**67%**	
Indicator 1.3.1: Number of farmers trained by year	Baseline: 800 (2016) Target: T: 2'400 (2019), at least 50% F	**Result: 971** 2016: 340 /52% F/ 2017: 631 /56% F/	10 different topics of trainings organized for 631 farmers from 18 soums of 9 aimags.	60%		Number of farmers trained tells neither anything about the quality nor about the effect (usefulness) of the training. --> Number and topic of trainings on demand of farmers. --> Satisfaction degree of farmers with training
Indicator 1.3.2: Satisfaction degree of farmers with advisory services	Baseline: TBD (2016) Target: 50% (2019)	**Result: 80%** 2016: 2017: 80%	Trainings and advisory services are evaluated every time and average result of safisfactory is 80%	80%		Ok.
Indicator 1.3.3: Nb of advisory centres at soum level	Baseline: 0 (2016) Target: 3 (2019)	**Result: 3** 2016: 1 2017: 2	Two pilot extension center were established in Mandal soum of Selenge aimag and Bornuur soum of Tuv aimag. Pilot extension center has open field and building with training room, seed shop and office. The demonstration fields at extension centers are used for growing various varieties of vegetable species this year and/or under green fallow.	100%		The extension centres are of course an important infrastructure for services and knowledge transfer. However, the existance of an extension centre is no indicator for transferred knowledge. More interesting would be to test transferred knowledge to farmers in form of videos, in which the farmers demonstrate their new knowledge and skills. The videos could be used for training and TV publicity. Accordingly, the indicator could be: --> "Observed application of new knowledge and skills by trained farmers". --> Or survey among farmers about how they assess the usefulness of the extension centre or the number and quality of services received in extension centre.
Outcome 2:	**Income of vegetable farmers in rural areas, especially small scale farmers and women headed households is improved through improved and inclusive markets for vegetables**			**69%**	**35%**	Alternative wording for outcome 2: --> "Number of cooperatives having taken up actively cooperative marketing of their produce."
Indicator 2.1: Average annual income per target HH from vegetables	Baseline: (2016) Target: > 20% (2019)	**Result: 54%** 2016: 54% 2017: 67%	According to a baseline study, the average annual income per target household from vegetable production is 54% from total income. Vegetable market research conducted by the Mongolian Marketing Consulting Group (MMCG) in November 2016 found that the average monthly income of vegetable farmers, target households,is MNT 1,176,698, and 67.4% of total household income or MNT 793,095 came from the sale of vegetables.			Ok, this indicator is limited to income from vegetable. Same remark as for the economic impact under project goal. With an annual inflation of >7%, the livelihood will not improve, but getting worse. 2012-2014, the inflation rate in Mongolia was around 12-13%; 2015 at 6.6%, 2016 at 1.1%. --> What is the average annual income per target household from vegetable? Baseline (2016)? 2017? At present, the given result mentions the share of the income in %, not the amount in MTN.
Indicator 2.2: Share of vegetables marketed through farmer cooperatives	Baseline: 0 (2016) Target: > 30% (2019)	**Result:**	Study results will be ready by Dec, 2017.			Nationwide or project area? --> Limit this indicator to the project area.
Indicator 2.3: Number of functioning contracts between cooperatives and private sector	Baseline: 0 (2016) Target: 15 (2019)	**Result: 1** 2017: 1	Commercial contract to supply cabbage made between cooperative members (8 farmers) and Delta Holding LLC. According to the contract DH LLC is expecting to receive 900 ton cabbage.			In addition to the number of contracts, their size needs to be taken in consideration: --> "Number and size (importance) of …"
Output 2.1	**Collective action for marketing (farmers' groups / cooperatives) is initiated**			**87%**	**61%**	
Indicator 2.1.1: Number of cooperatives involved in marketing (by aimag and soum)	Baseline: 0 (2016) Target: 10 (2019)	**Result: 12** 2016: 4 2017: 8	Project supported 8 cooperatives located in Tuv aimag's Jargalant soum /2/, Selenge aimag's Shaamar soum /1/, Zuunburen soum /1/, Darkhan-Uul aimag's Orkhon soum /1/ and Orkhon aimag's Jargalant soum /3/ in 2017 and in addition 4 cooperatives from 2016.	80%		Or: --> "Number of cooperatives having taken up actively cooperative marketing of their produce."
Indicator 2.1.2: Number of individual (IS)/collective (CS) storages	Baseline: 0 (2016) Target: > 40(IS); 10(CS) (2019)	**Result: 2 (IS); 7 (CS)** 2016: 1 (CS) 2017: 2 (IS); 6 (CS)	2 individual storages with total capacity of 280 ton and 6 collective storages with total capacity of 700 ton are supported and able to store cabbage, garlic, onion and greenhouse vegetables in some soums of Tuv, Selenge and Orkhon aimags.	80%		Ok. But only used store rooms add value. Suggestion: --> add "in use" or "used".
Indicator 2.1.3: Number of cooperative leaders trained	Baseline: 0 (2016) Target: 50 per year, at least 30%F (2019)	**Result: 258 /64% F/** 2016: 198 /61% F/, 2017: 60 /66% F/	Cooperative leaders training organized in UB and 60 /66% female/ farmers participated.	100%		Ok, but trained in what? Specify "training in cooperative management" (Somehow it is not clear, where these 258 leaders are all coming from; the project supports 8 cooperatives.)
Output 2.2	**Marketing channels are well managed**			**57%**	**17%**	This output is too ambitious! The marketing channels are not under control of the project. --> Maybe better: "Marketing channels are improved" or "New marketing channels are set"
Indicator 2.2.1: Number of wholesale market sales points for vegetables accessible to farmers in UB	Baseline: 1 (2016) Target: 3 (2019)	**Result: 2** 2016: 1 2017: 1	MoFALI project for public agricultural wholesale market in UB is in progress. Feasibility study, finincing and land issues are under progress. Project is colloborating with Selenge market to create vegetable collection and distribution center with storage facility at the market.	50%		Ok.

Indicator 2.2.2: Number of farmers trained :500 per annum	500 per annum (at least 50% F)	**Result:** 2016: 173 /65% F/ 2017: 906 /59%/	Training organized for 906 participants (59% female).	70%		What is the expected effect of these trainings? Accordingly (e.g.): --> "Number of farmers organized in cooperatives or sales groups"
Indicator 2.2.3: Volume of vegetables sold through wholesale market sales points, tonnes	Baseline: 0 (2016) Target: > 40% (2019)	**Result: TBD**	Baseline study results will be ready by Dec, 2017.	50%		Does it mean: Baseline 2016: 100%; target 2019: > 140%? Possible alternative: --> "Increase of wholesale market prizes fetched by farmers' groups and cooperatives (plus >20%)"
Output 2.3	**Market stakeholders have access to market information**			**68%**	**33%**	
Indicator 2.3.1: Commercial contracts established	Baseline: 0 (2016) Target: 10 (2019)	**Result: 1** **2016: 0** **2017: 1**	Commercial contract to supply cabbage made between cooperative members and Delta Holding LLC.	20%		Ok. But somehow, this indicator refers more to marketing channels than to market information.
Indicator 2.3.2: Trainings conducted	Baseline: 0 (2016) Target: 10 (2019) for total farmers 500, at least 50%F	**Result: 5** 2016: 1 training with 202 participants /50% F/ 2017: 4 trainings with 241 participants /56% F/	Vegetable platforms organized in Ulaanbaatar, Tuv and Selenge aimags among stakeholders from local government organizations, farmers' group, donor organizations, researcher groups and NGOs.	70%		Trainings about use of market information channels? An indicator might then be --> "Farmers' feedback about usefulness of market information"
Indicator 2.3.3: Sources of market information (websites, publications, etc.)	Baseline: 0 (2016) Target: 5 (2019)	**Result: 5** 2016: 3 2017: 2	(1) Website **www.mfard.mn** is launched, (2) **mobile app** in under progress. (3) Project is also using mass **SMS** sending service to provide info at timely basis. (4) www.facebook.com/mfard.mn in now active with 15300 followers, (5) **https://www.youtube.com/channel/UCGB1efc0XHBghc1MVjCql7w** is now active	100%		Ok.
Indicator 2.3.4: Awareness raising campaigns about consumption of vegetables especially in urban and peri-urban areas	Baseline: 0 (2016) Target: 10 (2019)	**Result: 4** 2016: 1 2017: 3	(1) Project jointly organized Green Autumn Days with MoFALI and Global Communities NGO. (2) "Veggie Cook Show campaign" was organized jointly with MOGFA /Mongolian Organic Green Food Association NGO/. As a part of the campaign, cooking training, facebook cooking contest and series of interviews in Mongol TV's morning program organized. (3) Cooking video with influencer /celebrities/ and short videos, infographics etc produced. (4) Diet and cooking training for potential organizations to connect marketing cooperatives in 2017 is conducted.	80%		Ok. Though this indicator refers to promotion of vegetable consumption (which can be understood as part of market information).
Output 2.4	**Vegetable processing initiatives are supported**			**65%**	**41%**	Local initiatives of vegetable processing or any initiatives (including bigger entreprises?)
Indicator 2.4.1: Vegetable processing initiatives supported	Baseline: 0 (2016) Target: 10 (2019)	**Result: 13** 2016: 1 2017: 12	4 small scale vegetable processing unit in Tuv, Selenge, Darkhan-Uul and Orkhon aimags, 6 vegetable drying equipment in farmer households and, 2 carrot juicer in two ger district low-income area kindergartens of Ulaanbaatar is supported. Value of production is not yet reported.	80%		Indicator has the same wording as output 2.4. Suggestion: --> "Number and scope of local processing initiatives"
Indicator 2.4.2: Share of processed local vegetables	Baseline: 0 (2016) Target: > 10% (2019)	**Result: TBD**	Baseline study results will be ready by Dec, 2017.	50%		In target areas only, not nationwide! Are 10% realistic? Differentiate for different vegetables! Cabbage might not be processed in huge quantities. --> Limit to local initiatives and specify vegetable species!
Outcome 3:	**Vegetable production and consumption of poor households in urban and peri-urban areas are improved through vegetable gardening**			**79%**	**62%**	The wording "through ..." describes (part of) the strategy within this outcome; no need to state this.
Indicator 3.1: HH involved in vegetable production	Baseline: 700 (2016) Target: 2,400 (2019)	**Result: 1,931** 2016: 2,874 2017: 1,931	According to the statistics provided by agriculture department of UB, vegetable producers in Ulaanbaatar is 1,931 in 2017. Project ogranized trainings and provide advisory services to 2,000 citizens from all districts of UB.	80%		Ok.
Indicator 3.2: Value generated by vegetable production, marketing, and consumption in MNT	Baseline: 0 (2016) Target: > 30% (2019)	**Result: 106,000** 2016: 106,000 2017: n/a yet	Average harvest of direct beneficiaries is 212 kg (cucumber, cabbage, tomato, salat, turnips etc). If counts average price of vegetable per kg is 500 MNT, value of households vegetable production is 106,000 MNT.	50%		Ok.
Output 3.1	**Vegetable production by vulnerable and resource poor households in urban and peri-urban areas is promoted**			**93%**	**73%**	
Indicator 3.1.1: Number of producers	Baseline: 700, M300/F400 (2016) Target: 2400 M1100/F1300 (2019)	**Result: 1,931** 2016: 2,874 2017: 1,931	According to the statistics provided by agriculture department of UB, vegetable producers in Ulaanbaatar is 1,931 in 2017. Project ogranized trainings and provide advisory services to 2,000 citizens from all districts of UB.	80%		Repetition of above indicator. --> Drop it.
Indicator 3.1.2: Quantity of vegetable produced per HH (kg)	Baseline: 40 (2016) Target: 300 (2019)	**Result: 212** 2016: 212 kg 2017: N/a yet	Average harvest of direct beneficiaries is 212 kg (cucumber, cabbage, tomato, salat, turnips etc). Number direct of beneficiaries are 158 households.	100%		Ok.
Indicator 3.1.3: Number of greenhouses supported by project	Baseline: 0 (2016) Target: 11 (2019)	**Result: 99** 2016: 59 2017: 40	Total 99 greenhouses of 3,228 m^2 plastic greenhouses were distributed to households, schools and kindergardens.	100%		Baseline (0) and target (11) cannot be realistic values. Suggestion: --> "Number of new, maintained and used greenhouses". Count cumulative over the years to see whether people maintain or abandon the greenhose production.
Output 3.2	**Consumption of vegetables in urban and peri-urban areas is encouraged**			**65%**	**50%**	
Indicator 3.2.1: Percentage of vegetable grown by HH and used for own consumption (%)	Baseline: 10% (2016) Target: 50% (2019)	**Result: 40%** 2016: 40% 2017: n/a yet	Based on calculation of counting each household with 4.2 members, yearly consumption of household's vegetable is 529 kg (according to FAO recommedation). Average harvest 212 kg (project result) means 40% of vegetable consumption is provided by own production.	80%		Ok.
Indicator 3.2.2: Yearly income from vegetable sales (MNT)	Baseline: 500'000 MNT (2016) Target: 1'500'000 (2019)	**Result:** 2016: 106,000 2017: n/a yet	Average harvest of direct beneficiaries is 212 kg (cucumber, cabbage, tomato, salat, turnips etc). If counts average price of vegetable per kg is 500 MNT, value of households vegetable production is 106,000 MNT.	50%		No need to have this indicator twice; it appears already under outcome 3 (indicator 3.2). --> Drop this indicator. Batzaya: baseline figure 500,000 MNT is not realistic figure. Suggest to discuss and change it…

Output 3.3	**Resource poor and vulnerable households have access to knowledge and training**			**80%**	**65%**	
Indicator 3.3.1: Number of HH representatives trained in production & consumption (men/women)	Baseline: 900 M400/F500 (2016) Target: 3,000 M1,200/F1,800 (2019)	**Result: 3,645 M1,012/F2,633** 2016: 2,076 M614/F1,462 2017: 1,569 M398/F1,171	Total of 34 (47 days) times trainings on various topics related to vegetable production and consumption conducted and in total of 1,569 participants participated. (75% female/25% male).	80%		Ok.
Indicator 3.3.2: Advisory points established in each Khoroo	Baseline: 0 (2016) Target: ... (2019)	**Result: 8** 2016: 4 2017: 4	8 model households of 3 districts are funcioning as an advisory points in their khoroos.	80%		Even better would be an indicator who informs about activities and results of these advisory points. --> "Number, activities and results of advisory ppoints in each Khoroo"
Indicator 3.3.3: Publications produced and distributed	Baseline: 0 (2016) Target: 50 (2019)	**Result: 15** 2016: 1 2017: 14	Handouts /3/, brochures /2/, newspaper /3/ TV broadcasting /6/ developed and distributed to public. Reached at least 5,000 people.	80%		Ok. Is the target (2019) realistic?
Outcome 4:	**Legal framework**			**42%**	**30%**	Prodoc: "Policy / legal and institutional framework of the vegetable sector is improved" What is the indicator to assess outcome 4 as a whole? What should become visible by 2019? E.g.: --> "Legal framework in the domains of *vegetable seed testing, releasing and production* and *organic vegetable püroduction and marketing* is defined/revised and implemented"
Output 4.1:	**Legal policy on IPM, pesticides abd organic agriculture is formulated**			**65%**	**40%**	
Indicator 4.1.1:Analysis of current policy	Baseline: 0 (2016) Target:2 (2019)	**Result:** 1 (2017)	The revision of existing Law on crop seed and variety was carried out. It had found gaps, overlappings and breaches of the provisions within the law itself as well as with other related laws.	50%		Suggestion --> "Analysis of current policy and legal framework with inventory of needed adaptations"
Indicator 4.1.2: IPM, pesticides and organic legal regulations (1 each)	Baseline: 0 (2016) Target:2 draft laws and 4 secondary legislations related to producing organic vegetables (2019)	**Result:** 1 draft law and 4 secondary legislations	Formulated draft law on seed multiplication and variaty approval. 4 secondary legislations/regulations stated in Law on Organic Food were formulated.	30%		Ok.
Output 4.2:	**Public servants have enhanced capacities regarding IPM and organic**			**10%**	**0%**	
Indicator 4.2.1:Number of trained staff	Baseline: 0 (2016) Target:100 (2018)	**Result:** 0	n/a	0%		Trained in what? E.g.: --> "Number of staff trained in rules and regulations on IPM and organic production
Indicator 4.2.2.Number of ToRs issued	Baseline: 0 (2016) Target:5 (2018)	**Result:** 1	Simple manual on food safety legislation is being prepared.	20%		ToRs what for? E.g.: --> " Number of ToRs issued for production of manuals or for formulation of by-laws"
Output 4.3:	**Pilots to implement regulations (IPM, pesticides, organic, etc) are carried out and documented**			**50%**	**50%**	This output would better be placed under Outcome 1: It is about production, not about the revision of the legal frame.
Indicator 4.3.1: Pilot on Integrated pest management (IPM)	Baseline: 0 (2016) Target:9 (2018)	**Result:** 6	Each 6 sessions of the Training of Trainers (ToT) as well as 6 sessions of Farmers Field School (FFS) was taught IPM and Labour Safety during appliying pesticides were taught alongside with organic pest management	60%		Ok. --> Pilot complete FFS (including ToT) for IPM
Indicator 4.3.2: Pilot on traceability for organic argiculture	Baseline: 0 (2016) Target:3 (2018)	**Result:** 1	In the 3rd session of ToT, there was introduced impotance of traceablity neither for organic vegetable nor for conventional vegetable production.	30%		Ok. --> Pilot training on travceability of organic production for MoFALI staff and trainers of FFS
Indicator 4.3.3: Pilot on biological pest management of specific crops	Baseline: 0 (2016) Target:9 (2018)	**Result:** 6	Training of trainers (ToT) for Farmers Field School (FFS) was conducted. 6 sessions of ToT and 6 sessions of FFS were held respectively in Mongolian University Greenhouse and 3 extension centers in Bornuur, Orkhon and Mandal soums. 15 farmers were completed ToT and handed certificates as a trainers for FFS. Following the ToT, the three sessions of the Farmers' Field School were organized by the trained trainers for the neighboring vegetable farmers (around 60-70 participants). Classroom sessions were held in the three extension centers of above-mentioned soums. While field training was held in the greenhouses and plantations of the Extension centers as well as farms.	60%		Ok. --> Pilot complete FFS (including ToT) on biological pest control of specific crops
Overall Average				**67%**		
Results of Gender mainstreaming activities / gender specific actions	Supporting of vegetable processing units (12) and morning market (1) creates at least 20 working places for women. Providing with small scale field equipment, more than 30 pieces, is to reduce women labor tense in the field. Especially, weed control is usually done by women and childrens.					
Results of actions on synergies and cooperation with other SDC projects	Project collaborates with ESD project on promoting eco club of schools and organizing excursion to exchange experiences between schools. As a result, eco club pupils learnt about vegetable nursing and consumption. Project collaborates with TVET in Shaamar soum, Selenge aimag on running of vegetable processing unit and provide with relevant courses to farmers. As a result, farmers in Shaamar soum have access to courses in the TVET.					

VEGI MTR --- Annex 2

VEGI MID TERM REVIEW 2017
STAKEHOLDERS MEETING DISCUSSION ON OUTCOME RECOMMENDATIONS

Minutes of the stakeholder meeting (09 October 2017)

Recommendations from MTR team showed on PPT	Group discussions and recommendations additional ideas and concerns
OUTCOME 1 * Extend seed network including more actors in seed network: Unlicensed and licensed seed producers, MFARD, scientific organizations, vegetable producers, etc. * Establish a PPP (University/IPAS, MoFALI, business enterprises, MFARD)	**Seed production:** • Seed multiplication and seed test on variety is the main important issue for future development of the sector • Hybrid seed experimental work is important focus for further scientifically based production of seeds • Inspection system : PPP is important • Improvement on inspection system of IMPORTED SEED • Improvement on quality of locally produced seeds **IPM** • Field tests of bio pesticides and permanent supply of organic pesticides, chain development : Raise and supportive actions from MoFALI and Scientific organizations' contribution • Renew approved pesticide list • Pesticides packaging: Small farmers??
* Intensify accessibility of mechanized equipment for vegetable production * Micro credit programme for the vegetable sector	**Equipment and innovation** • Promote hand tool supply and production produced locally (weeds control equipment, seedling etc.) • Plastic covering technologies (eco-friendly) • Improved technologies and transfer knowledge of getting higher yield from small size of land : SMALL LAND BIGGER YIELD
* Use early matured varieties for timely and early marketing when price is highest	**Greenhouse vegetable production** • To increase productivity of greenhouses • Good planning of rotation • Cooperative actions of greenhouse owners / one variety, planned production, cooperative sales actions • PPP development in greenhouse industry • Greenhouse plant seed cooperatives development
Discussion topics & questions : * **Strategy for organic production, incl. regulations, inspection, by-laws, etc.**	**Extension center** • Local government support and linked activities • Greenhouse extension center in Zuunmod at Atriin shim • Regional extension center development • Young generation support and practical training on

	field • Internal regulation documents for extension centers • Training with fee (project support 50%, trainers 50% etc.) • IPM knowledge transfer activities • Contribution of all NGO's and extended cooperative actions need to be held **GAP (Good Agricultural Practice):** • Packaging development and model farming • GAP implementation for every farmers • GAP certification system nationwide
OUTCOME 2 * Developing standards for marketing of quality products * Establish direct contracts with wholesalers and retailers / intensify platform discussion * Continue negotiation on establishment of wholesale market in UB * Use social media for marketing of organic production * Support cooperatives in developing marketing strategies * Extension center in Zuunmod in cooperation with Atriin shim greenhouse farm * Branding and action development of cooperatives * Supportive policy for cooperatives who are open for small (poor household) farmers as members * Capacity building of cooperatives, improve business management skills * Marketing cooperatives development focused on exact special branding - VERY IMPORTANT * Sustainable sales network, and direct sales channel	**Updated statistics of Mongolia agriculture sector: 35000 households, 60.000 individual farmers, 400 companies are active in 2017** **Wholesale market development and cooperation:** • Project support of establishing National wholesale market like GARAK market in Korea: this has to be under public ownership, with good management system • Local government support to beneficiaries to sale vegies at wholesale market based on current situation and facilities • Hansalim of Korea could be an example establishing Organic vegetable PGS system • Value chain of vegetables • Online sale and order: development needed • Nomin supermarket chain cooperation • Branding and sales of special variety • Quality improvement of vegetables for direct sale • Packaging development and supply to 430 points currently established locally and in UB • Wholesale trade with cheap price / without middleman • Cooperatives capacity building actions have to be focused on increasing their responsibility of agreement duties with customers

development * Marketing and PR activities to introduce cooperatives **Discussion topics & questions :** * Strategy for new wholesale market system in UB and in Aimags * Market stakeholder platform: How to reach good cooperation? * Sustainability of the market info	
OUTCOME 3 * Select districts with households' active contribution and effort * Evaluate effects of training more than sheer numbers * Micro-financial service to household farmers * Processing support : Concentrate on home consumption, not on marketing * Irrigation drip irrigation and save water consumption * Permaculture design and organic farming technologies * School and Kindergarten: From demonstration to competition among students' groups **Discussion topics & questions :** * Sustainability of vegetable production in model streets * Impact of model street on other streets and impact of vegetable growing in schools and kindergarten	**Model street and household gardening sustainability :** • Promotional campaigns and activities between model districts from project • Early matured vegetable household production model to be introduced with the purpose to increase income of households (200.000-600.000 tugrik income rise expected) • Sales channel support locally and direct sale to neighbors • TV campaign to transfer experience and share success stories • Advertising using TV and other media channels to raise public awareness on vegetable benefits and consumption • Clean and well planned hashaa / garden • Fund raising contribution from Model district beneficiaries and competition among households • Reward the most active household farmers • Experience sharing tours and visits • Irrigation and training support to next streets if water resource is sufficient from current water system **Kindergarten and school garden sustainability** • Increased contribution of all children at school • Active role of parents • Promotional activities among eco club kids • Storage and processing advice to school and kindergarten cookers • Organic vegetable growing methods and training to all beneficiaries • Facilitation from project of extended period of

	greenhouse
OUTCOME 4 * Develop action plan in more detail. * Organic production, labelling and certification. * Food safety (residues of pesticides), integrated pest management * Price policy, import regulation * Cooperative Law (ease the rules for agricultural cooperatives to make it manageable for farmers) * Seed multiplication and varietal approval, crop law. * Agricultural extension and capacity building * Implement new laws and regulations * Adapt tender rules to make it possible that public units (schools, kindergartens, hospitals, military canteens) can buy from local market. **Discussion topics & questions :** * Define and clarify needed actions for the coming two years: * What by-laws to the law on organic production? * Prize policy and regulations * Public procurement rules to strengthen local products on the market	**Quality control of the sector:** • Vegetable quality standard renewal • Review on 12 old standards and renew them • Review on processing and storage standards of vegetable sector • Proposal to make a change for tender regulations to add supportive content for local farmers • Cooperative law development: Marketing cooperatives development issues • One price policy implementation among farmer cooperatives in Soum and Aimag level • GAP implementation among cooperatives • Easy access to market information to farmers: Farm gate price, yearly minimum price based on operational cost, wholesale and retail price etc. • Price policy to rise: WHOLSALE PRICE **Certification** • Need to establish a sustainable network of GAP counsel at the MoFALI • Capacity building of agronomists and specialist of sub counsel in Aimag and Soum level

Ulaan Baatar, 10.10.2017 / OD

VEGI MTR --- Annex 3: Schedule for the MTR

Date	Description	Participants	Responsible person	Venue
27 September, Wednesday				
12:00-14:00	Lunch (MTR team)	MTR Team		
14:00-15:15	Meeting with VEGI project team (agenda review and overall meeting with Turmandakh)	Mr. Turmandakh, MFARD, VEGI project manager	-99277280	VEGI project
15:30-17:00	Briefing at SCO Mongolia	Ms. Gabriella Spirli, Director of cooperation Ms. Baigalmaa Gongor, NPO Mr. Andreas Weber, PO	GNB	SCO Mongolia - 331422-0
28 September, Thursday				
09:00-10:30	Meeting with MoFALI, Crop Production Policy Implementation and Coordination Department	Mr. Tsendgombo Bolorchuluun, Director General Ms. V. Oyunsuvd, Senior Specialist Vegetable Production	Turmandakh-99277280	MoFALI
11:00-13:15	Meeting with VEGI project team - Component 1	Ms. Suvd, MFARD Vegetable Specialist	Batzaya-99246803	VEGI project
13:00-14:00	Lunch			
14:00-15:30	Meeting with VEGI project team - Component 3	Ms. Byatskhandaa Jargal, MWFA	Byatskhandaa-99991552	Nisora building
15:45-17:00	Meeting with Municipality of Ulaanbaatar Agriculture Department (Component 2, 3)	Ms. Byatskhandaa Jargal, MWFA Mr. Tserenlkham Tumurtulga, Head of Section Ms. Tsedenbal Tumurtogoo, Senior Officer	Batzaya-99246803	Ulaanbaatar authority building Mr. Tumurtulga and Mrs.Zandarmaa
17:30-18:45	Meeting with VEGI project team - Seed manager	Mr. Nyamjav, MFARD seed manager Mr. Ganbaatar, Accountant	Batzaya-99246803	VEGI project
19:00-20:00	e-mail Correspondence with VEGI project team - Component 2	Ms. Lkhamsuren Khandsuren, MFARD Marketing Specialist	Batzaya-99246803	
29 September, Friday				
09:00-11:00	Meeting with FAO (Component 4)	Ms. Altantsetseg Balgan, Legal Officer FAO	-99016382	FAO, UNDP house
11:00-18:00	Visit Ger district Nalakh Model House Kindergarden School	Ms. Jargal Byatskhandaa, MWFA Ms. Batzaya, MFARD M&E Specialist Ms. Ganchimeg, Nalaikh khoroo governor Ms. Group of women, model street, uvur shand street # 15, Nalaikh district Ms. Amarjargal, Teacher Kindergarden Ms. Ulziidelger, Director and teacher School	Byatskhandaa-99991552	TBD (Khan-Uul and Nalaikh)

30 September, Saturday				
09:00-11:00	Visit UB markets	Mr. Turmandakh, VEGI Project Manager		25 km to Zuunmod, Tuv aimag
11:00-15:00	Visit to Atriin shim company greenhouse, meet with farmers including lunch	Ms. Bayarkhuu, Director of Atriin Shim	, mobile: 99788585	Zuunmod, Tuv aimag
01 October, Sunday				
09:00-18:00	Team work, half day off	MTR team		VEGI project???
02 October, Monday				
09:00-15:00	Travel to Bornuur and meet with a head of MFARD branch, soum agricultural officer and farmers and visit storage and extension center	Ms. D. Altanonts, Bornur Soum Agronomist Mr. D. Tsengel, Head of MFARD Branch Bornour Soum Ms. Atartungalag, Agronomist of Extension Centre Mr. D. Munkhbat, member of MFARD, vegetable grower	Atartungalag a head of MFARD branch, mobile:	Bornuur, Selenge aimag
15:00-18:00	Travel to Zuunkharaa and meet with a head of MFARD branch, soum agricultural officer and farmers and visit to common storage and greenhouse and extension center	Ms. Narmandakh, Head MFARD Branch Mr. Batbayar, Cabbage Farmer Ms. Battugs, Manager of Extension Centre Mr. Bayarsaikhan, Manager of Greenhouse and Storage Complex Mr. Tsogtbataar, Head of Sales Cooperative, onion planter	Narmandakh a head of MFARD branch, mobile: 9939 0319	Zuunkharaa, Selenge aimag
03 October, Tuesday				
09:00:13:00	In Zuunkharaa and meet with a head of MFARD branch, soum agricultural officer and farmers and visit to common storage and greenhouse and extension center	Ms. Bolormaa, Soum Agronomist Ms. Narmandakh, Head MFARD Branch Mr. Batbayar, Cabbage Farmer	Narmandakh a head of MFARD branch, mobile: 9939 0319	Zuunkharaa, Selenge aimag
13:00-19:00	Travel Zuunkharaa/Mandal to Darkhan (120 km) and Meeting in Institute of Plant and Agricultural Sciences (IPAS)	Ms. Dr. Miujmaa, Head of Biotechnology Laboratory Ms. Narandelgeve, Head of Vegetable Sector Ms. Bangalmaa, Seed Inspector Mr. Munkh Margad, Monitoring Specialist MoFALI		
04 October, Wednesday				
09:00-20:00	Travel and visit to Orkhon Extension center of MFARD Local authorities Meeting with farmers/beneficiaries Cooperative members etc. And travel back to UB	Ms. Batmyadag, Head of MFARD Branch Mr. Uuganbaatar, Agronomist of Extension Centre Mr. Nyamdavaa, Head of Peoples Representative Meeting Ms. Nanjid, MFARD Steering Committee Member Mr. Tseden Ish, Soum Agronomist	Batmyadag, a head of MFARD branch, mobile: 9906 6386 Uuganbaatar, an agronomist, mobile: 9914 9288	Orkhon, Darkhan-Uul aimag

05 October, Thursday				
09:00-10:30	SECIM II project, UNDP, FAO	Mr. Gankhulug Ganbat, National Project Coordinator Mr. Atarbold Tsagaan, Consultant		
12:00-13:30	SICA (Statistical Institute for Consulting and Analysis), vegetable price analyst	Ms. Purevdulam Jamiyansuren, Manager Business Dev. Dep. Mr. Munkh-Erdene Urtuasan, Manager Business Dev. Dep. Mr. Erdene Ganpurev, Director of Research Department		
14:15-15:30	MOGFA, organic production NGO	Ms. Zoljargal Batbaatar, CEO		
15:30-16:30	Presentation on seed production in Uvs	Mr. Turmandakh, Project Manager VEGI		
06 October, Friday				
09:00-18:00	Drafting report Spare time for additional interviews (if needed)	MTR team		
07 October, Saturday				
09:00-18:00	Drafting report, preparing final presentation			
08 October, Sunday				
09:00-18:00	Day off (or drafting report)			
09 October, Monday				
09:00-12:30	Stakeholder feedback meeting	See MTR report, annex 2: Stakeholder Meeting		
12:30-14:00	Lunch with stakeholders			
14:30-17:00	Integration of stakeholder feedback into report Spare time for additional interviews	MTR team		
10 October, Tuesday				
09:00-18:00	Drafting report Spare time for additional interviews (if needed)	MTR team		
11 October, Wednesday				
09:00-11:00	Debriefing to SCO Mongolia	Ms. Gabriella Spirli, Director of cooperation Ms. Baigalmaa Gongor, NPO Mr. Andreas Weber, PO Mr. Turmandakh, MFARD, VEGI project manager Ms. Batzaya, MFARD M&E Specialist Ms. Altantsetseg Balgan, Legal Officer FAO	GNB	SCO Mongolia - 331422-0
11:00-18:00	Analysis and drafting report	MTR team		
12 October, Thursday				
00:00	Travel back			

Ulaanbaatar, March, 2017

Terms of Reference

External Mid-Term Review of the Inclusive and Sustainable Vegetable Production and Marketing (VEGI) Project

Period and duration of the mission: September-October, total 20 days (10 days in country)

1 Background

After the switch from the centralised to the market oriented economy, the crop sector regressed in Mongolia and it took several years to recover. Despite steadily growing production and consumption, the vegetable sector is not self-sufficient and Mongolia imports around 40% of its vegetables from China. Developing agriculture as an alternative to mining is a priority for the government. Challenges in production, storage, processing, marketing and legal framework are however affecting the vegetable sector, which has still a growing potential to ensure better livelihood for the farmers and the supply of locally grown vegetables for the consumers.

The VEGI project intends to contribute to poverty alleviation through a growing vegetable sector in Mongolia. Supports for increased and diversified production, storage, processing, marketing, consumption and a conducive legal framework will contribute to improved livelihood of rural households and to a more diversified economy. In order to foster its poverty focus, the VEGI project promotes vegetable gardening and consumption by poor households in peri-urban areas as well.

The objective of the project is to contribute to improved livelihood of vegetable growers (especially small-scale farmers in rural areas and poor households in urban/peri-urban areas) through inclusive, gender balanced and sustainable growth of the vegetable sector. The following results are intended to be achieved through 4 components

1) Domestic vegetable production of farmers, is increased through better varieties, seeds, improved technology and available know-how
2) Income of vegetable farmers, especially small scale farmers and women headed households is increased through improved and inclusive markets for vegetables
3) Vegetable production and consumption of poor households in urban and peri-urban areas(ger district[1]) are improved through vegetable gardening
4) Policy/legal and institutional framework of the vegetable sector is improved

Summary of the Results 2016

The VEGI project started its implementation in April 2016 and within a short period of time was able to show tangible first results.

[1] *The ger districts in the peri-urban and urban areas in Mongolia are spontaneous urban settlements. These areas are located in the outskirts of the major cities in Mongolia. The main dwellings present in the ger districts are yurts (ger). Wooden or brick houses are present as well. The ger districts are connected to the main electricity grid but not to central heating, water pipe and sewage system. The land is divided in "Hasha", which are usually 700 square meter plots, which need to be fenced by the household as a condition to receive a land tenure certificate, lasting for 15 years. There is sufficient land in a Hasha for vegetable cultivation for home consumption.*

In component 1 and 2 (vegetable sector support), field tests of new varieties were continued[2] (71 varieties of 18 vegetables); the local seed production of highly performing varieties has been expanded, a seed fund supporting the local vegetable seed production and the pre-financing of seed imports has been established, linkages between farmer's cooperatives and private companies were initiated and fostered, collective and private storage capacities especially in cabbage were expanded, challenges of vegetable marketing were assessed and possible scenarios elaborated including exposure to foreign examples (South Korea), innovation in production (pilot planting machine) were supported, production in greenhouses has been developed and improved through the use of adapted varieties, the first farmer association owned vegetable extension centre has been established providing advice, training, supply of inputs, and adapted machineries to small scale farmers. The progress of all these activities has been possible thanks to a very intensive engagement of all the involved partners including the local and national authorities with whom the project worked very closely together.

The component 3 in the GER district has been successful as well although the project could not receive the Government funds for co-financing as planned the water supply system in the model streets. According to past experiences, access to running water is an important condition for the vegetable production in the GER district. Fetching the water for irrigation at the Water Kiosk is too challenging and there is the risk that the Water Kiosk run out of supply. All this has been confirmed by the VEGI project as well. The access to water is among the most important success factor for the promotion of vegetable in the GER district. Supporting sub-urban poor households in home gardening has proven to be an effective poverty-reduction tool. After one year, all 61 households in the 4 model streets confirmed their success and their commitment to continue in vegetable gardening the coming years. Most of the households discovered vegetable production for the first time. They learned a new skill and how to make use of the land asset they already own. Usually vegetables are too expensive to be purchased by these households, but with the VEGI they suddenly get access to plenty of vegetable which has been firstly consumed at household level. The surplus has been distributed among close family, to neighbours and then also sold in nearby shops. Another advantage is the knowledge on vegetable consumption and the intensified social interactions between neighbours which usually have little social contacts.

The component 4 started with some delays due mainly to the reshuffle of the national partners. The component did a comprehensive assessment and elaborated an action plan for the policy measures and the institutional capacity building to be implemented during 2017.

2 Objective of Mid-Term Review (MTR)

The External Mid Term Review (MTR) will assess the relevance, efficiency, effectiveness and sustainability of the VEGI Project implementation and will assess the delivery of the project so far at outcome and output level taking into account internal and external factors to the project's performance.

The MTR is requested to update the analysis of the context, the assumptions and the risks done during the project planning (see Project Document).

Recommendations of the MTR need to take into account the context changes or changes in the risks and the assumptions.

The MTR has the following objectives:

1. To review the relevance, efficiency, and effectiveness of the project outputs to date and assess outcomes and impacts which may already be visible in each of the 4 outcomes.
2. To make recommendations to improve the poverty focus, the gender equality mainstreaming and the sustainability of the project results and the sustainability of the implementing organisations, such as the MFARD.

[2] Variety tests were initiated by the Mongolian Potato Program in 2012 and were continued during the VEGI project

Specific topics per outcome

3. In outcome 1: to assess the current status of the established Seed Fund and to provide recommendations on how this Seed Fund should be improved in order to be sustainable at project end. Make a special assessment on the Seed Fund regulation and provide comments and recommendations. Make additionally a special analysis on the sustainability of hybrid seed imports and distribution to small scale farmers in particular.
4. To assess progress in outcome 2 particularly on the collaboration between farmer's cooperatives and associations and the private sector especially in storage, packaging and marketing. Make recommendations on how to improve this collaboration and to scale up best practices. Verify whether the assumptions and scenarios made in the cost benefit analysis were realistic and are still valid.
5. To assess the progress of outcome 3 in the promotion of vegetable production in the GER district of UB, and provide recommendations for SDC whether this component should be extended as initially planned in 2018 to the GER districts of Darkhan and Erdenet. In this case, provide recommendations on the implementation modalities of this component in those cities.
6. To assess the progress made in outcome 4 and verify whether the legal and institutional assessment identified the relevant topics to be addressed in order to ensure a conducive environment for the sector support.

3 Approach

The MTR is conducted at the end of September 2017. The final report is expected to be delivered and accepted by SDC by end of October 2017. The following approach should be considered:

1. Elaborate detailed planning of the MTR mission
2. Analyse key documents on project and context analysis
3. Make project visits and organize meetings and interviews with key partners (organised by MFARD)
4. Collect and analyze data
5. Prepare a preliminary presentation with findings of the MTR to be presented to partners for a first discussion and feedback
6. Integrate feedback of partners into the report
7. Present final findings: analysis and recommendations to MoFALI and SCO
8. Integrate feedback of MoFALI and SCO into the MTR report
9. Prepare draft report to SCO
10. Prepare final report

4 Review team

(i) Team Leader - International expert with M&E, value chain, marketing and vegetable or agricultural background; experienced to carry out MTR's and Evaluations. Previous experiences in Mongolia and or Vegetable sector are appropriate.

(ii) Vegetable/Agricultural local expert and translator with M&E skills and or agricultural/vegetable background and experiences.

5 Provisional plan

Dates	Description	Days
August	Contract, final TOR's, Detail plan, Study documents	2
	Travel to Mongolia	1
September	Meeting MFARD Meeting SDC Meeting MoFALI	1
	Visits and interviews with partners (countryside)	4
	Meetings and visits in UB	2

	Analysis and preparation of the presentation	2
	Stakeholder feedback meeting	1
	Analysis and report writing	1
	Meeting with MoFALI Meeting with SDC	1
	Travel back	1
	Draft report	2
	Final report	2
	Total	**20**

6 Reporting

The team leader is responsible towards SDC for the report.

7 Reference documents (will be provided on request only)

- VEGI ProDoc
- VEGI Credit Proposal
- Annual Report of VEGI 2016
- VEGI Gender assessment
- VEGI Poverty assessment and baseline survey
- Market analysis of the vegetable sector in UB/Mongolia, 2016
- Yearly Plan of Operation 2017
- Seed Fund Regulation (draft)
- Partner Risk Assessment

How to apply

Applicants (teams or individual consultants) are requested to submit a proposal including:

1. Curriculum Vitae of the consultant(s)
2. Technical proposal, including understanding of the TOR's and the proposed methodology (maximum 4 pages);
3. Budget including the rate for the consultancy and the expected travel costs.

Interested candidates are kindly requested to submit their offer before 4pm (UB local time) on the 19th of May, 2017 to the following mail address:

SDC Swiss Agency for Development and Cooperation, Sky Plaza Business centre, Olympic street 12, Khoroo1, PO Box 37, Ulaanbaatar-14210, Mongolia, Tel: +976 11 331422; E-mail: ulaanbaatar@eda.admin.ch; Reference: VEGI MTR

Organisations and/or consultants involved in the planning of the VEGI project are not eligible to apply for this MTR.

VEGI MTR ---Annex5

Sustainability recommendations of implementing organization - MFARD

Recommendations: MFARD sustainability after the project, and how to strengthen the organization management and scale up sustainable actions

TO MAKE MFARD THE LEADING VEGETABLE SECTOR NGO WITH PROFESSIONAL AND ACTIVE MOTIVATED TEAM AND MEMBERS

RECOMMENDATIONS IN GENERAL

1. INCOME DIVERSIFICATION

- Financial management and planning for short term, and long term to stabilize the financial activity of the NGO
- Motivate member contribution for steady income to cover operational cost of the NGO
- Differentiate annual membership fee, e.g. for small farmers 5.000 MNT, for medium farmers 10.000 MNT, for big farmers 20.000 MNT, for companies 50'000 MNT monthly
- Board membership fee: Not less than 1.000.000 MNT yearly

PPP

- Cooperation and co funding and subsidies from local government
- Cooperation with national and international programs, projects and organizations
- Cooperative works with NGO's with same mission and purpose; integrate and link actions
- COOPERATIVE ACTIONS and projects with business partners
- Make a profit from establishing nationwide network of seed supply and vegetable supply: BUSINESS COOPERATION actions and contribute for NGO funding
- CAPACITY BUILDING activities, TECHNICAL ASSISTANCE FOR EXTENSION CENTER FROM LOCAL GOVERNMENT DEVELOPMENT FUND

2. OPERATIONAL MANAGEMENT

- **NATIONAL PLAN AND MISSION:** Branch management plan, membership management plan, investment plan, financial plan to include a contribution of each current member and new members
- **STRONG TEAM BUILDING:** NGO leaders and experts have to be highly educated with marketing management skills and knowledge
- **YOUNG GENERATION MOTIVATION**: Attract young members including farmers, scientist, entrepreneurs, marketers, etc. who is showing a leadership in vegetable sector

- **MEMBER DEVELOPMENT AND CAPACITY BUILDING:** Young generation capacity building focused on production, marketing, product management and PR
- **BUSINESS AND MARKETING NETWORK:** Long term brand management of selected tested varieties in the region including all MFRAD members contribution
- **ORGANIC VEGETABLE AND MODEL FARM BRANDING:** To establish an organic vegetable model farm who are implementing – GAP (Good Agricultural Practice), IPM (Integrated Pest Management)
- **MEMBER DEVELOPMENT AND MOTIVATION:** **T**rainings, motivation activities, entertaining deals, sustainable business contracts with private sector, new members motivation policy to attract active farmers and SME, entrepreneurs and household members
- **SEED COMPANY DEVELOPMENT:** Regional and national seed policy, nationwide distribution network development of seed production and farmers, cooperation and contribution from each Aimag, Soum local government
- **COORDINATION AND COOPERATION WITH THE VEGETABLE SECTOR COMPANIES**: farming, processing, service providing, technical trade, etc.
- **SEED COMPANIES CONTRIBUTION FOR BOARD ACTIVITIES:** Seed companies and stakeholders representatives have to be a permanent members of the board, and support the activity financially when they become sustainable big suppliers
- **STRUCTURE MANAGEMENT RECOMMENDATION IN BRIEF**:
  Steering committee of sponsors, expert team (focused on production), advisory team (marketing and PR team outsourcing), HR team (member activities, sales), coordination team (local, national and international sales company development)

- **ACTIVE NEW MEMBERS**: 36.000 household farmers are nationwide. MFARD has 1200 members, it means approximately only 60 members in each Aimag; increase the number of farmers
- **THE MAIN FACTORS TO ATTRACT NEW MEMBERS:** BUSINESS NETWORK and sustainable INCOME
- **COOPERATION WITH SAME INTERNATIOANAL NGO:** Linked activities with international NGO's same purpose and mission (farmers' association)

Ulaan Baatar, 10.10.2017 / OD/EB

Annex 6: Assessment of the Cost benefit Analysis (CBA)

Assessment of the CBA 1 vegetable production (outcome 1, 2 & 4)

The table shown of the CBA for outcome 1, 2 & 4 is the table of the final Prodoc. It differs from the original table presented by the authors due to a reduction of the overall budget.

COST BENEFIT ANALYSIS OF THE VEGETABLE SECTOR - VEGI PROJECT MONGOLIA									
TABLE OF COSTS (in CHF)									
Costs (in CHF)	***Unit costs***	***2'016***	***2'017***	***2'018***	***2'019***	***2'020***	***2'021***	***2'022***	***comments***
SDC outcome 1		503'000	431'000	284'000	232'000				
SDC outcome 2		405'000	246'000	162'000	107'000				
SDC outcome 4		210'000	145'000	45'000					
MoFA subsidies		100'000	100'000	100'000	100'000	50'000	50'000	50'000	we assume that MoFA will continue to support the vegetable sector beyond the end of the project
EU/FAO		225'000	225'000	225'000	225'000				
IFAD		40'000	30'000						
Farmers									
Area expansion (new ha)		50	100	200	300	300	300	300	gradual area increase
Prod. costs new area (CHF/ha)	2'000	100'000	200'000	400'000	600'000	600'000	600'000	600'000	
Improve existing area (ha)	8'100	10%	20%	20%	30%	30%	30%	30%	
Add. prod costs existing area (CHF/ha)	500	405'000	810'000	810'000	1'215'000	1'215'000	1'215'000	1'215'000	
Costs of storage and marketing (CHF/t)	30	15'875	31'750	63'500	64'875	64'875	64'875	64'875	
TOTAL COSTS		**2'003'875**	**2'218'750**	**2'089'500**	**2'543'875**	**1'929'875**	**1'929'875**	**1'929'875**	
TABLE OF PRODUCTION & BENEFITS (in CHF)									
Costs (in CHF)	***Unit costs***	***2'016***	***2'017***	***2'018***	***2'019***	***2'020***	***2'021***	***2'022***	***comments***
Area expansion (new ha)		50	100	200	300	300	300	300	gradual area increase
Production on new area (t)	13.75	688	1'375	2'750	4'125	4'125	4'125	4'125	new area (from line above) multiplied by yield
Loss during storage and marketing (%)	10%	69	138	275	413	413	413	413	
Value of additional production on new area after deduction of losses (CHF/kg)	0.66	408'375	816'750	1'633'500	2'450'250	2'450'250	2'450'250	2'450'250	the price corresponds to 1'350 MNT/kg
Improve existing area (ha)	8'100	5%	10%	20%	20%	20%	20%	20%	% of 8'100ha that is improved with new technology
Additional production on existing area (t)	1.25	506	1'013	2'025	2'025	2'025	2'025	2'025	Improved area multiplied with yield increase (here 1.25t/ha = 13.75 t/ha - 12.5 t/ha)
Loss during storage and marketing (%)	10%	51	101	203	203	203	203	203	
Value of additional production on existing area after deduction of losses (CHF/kg)	0.66	300'713	601'425	1'202'850	1'202'850	1'202'850	1'202'850	1'202'850	the price corresponds to 1'350 MNT/kg
Total value of additional vegetable production (CHF)		709'088	1'418'175	2'836'350	3'653'100	3'653'100	3'653'100	3'653'100	value of additional production at farm gate prices
Cost Benefit Analysis for the Vegetable Sector									
		2'016	***2'017***	***2'018***	***2'019***	***2'020***	***2'021***	***2'022***	
Additional costs		2'003'875	2'218'750	2'089'500	2'543'875	1'929'875	1'929'875	1'929'875	
Additional benefits		709'088	1'418'175	2'836'350	3'653'100	3'653'100	3'653'100	3'653'100	
Cash flow		**-1'294'788**	**-800'575**	**746'850**	**1'109'225**	**1'723'225**	**1'723'225**	**1'723'225**	
NPV (13%)	**2'170'261**				exchange rate 1 CHF = 2'050 MNT				
IRR	**38.17%**								

Comments and assessment:

- Expansion of new area: The total vegetable planting area was in 2015: 2'708 ha; 2016: 3'929 ha, and 2017: 3'222 ha. (Data source: MFARD report)
  The planted area increased from 2015 to 2016 by 45% and from 2015 to 2017 by 19%, which is above or close to the assumed values.
- Vegetable production: 2015: 25'591 ton; 2016: 39'967 ton (+56%); 2017: Figures for the project target area not yet available. At national level, the production (75'700 ton) is expected to be similar to the harvest 2015 (72'741 ton). (MFARD report).
  Accordingly, the yield is for 2015: 9.45 ton/ha, and 2016: 10.17 ton/ha (+7.7%).
- For outcome 1-3, project expenses in 2016 remained below budget (about 75%); expenses for outcome 4 in 2016 close to zero due to late start of activities.

Conclusion: The assumptions and calculations in the above table seem to be more or less realistic, except for the drop in yield due to the exceptional drought in 2017.

Assessment of the CBA 2 urban and peri-urban vegetable production (outcome 3)

The table shown of the CBA for outcome 3 is the original table presented by the authors of the Prodoc, not the table of the official Prodoc version (which contains some errors in the line of the number of solar greenhouses).

COST BENEFIT ANALYSIS OF OUTCOME 3 - VEGI PROJECT MONGOLIA

TABLE OF COSTS for OUTCOME 3

Costs (in CHF)	*Unit costs*		*2 016*	*2 017*	*2 018*	*2 019*	*2 020*	*2 021*	*2 022*	*comments*
SDC outcome 3	CHF		300 000	250 000	250 000	200 000				
Farmers										
number of families involved	nb		300	400	500	600	600	600	600	total families (not cumulated)
vegetable area per family	m2	60								
total vegetable area (backyard, open field)	m2		18 000	24 000	30 000	36 000	36 000	36 000	36 000	we assume that contaminated soils can be avoided
production costs (open field)	CHF/m2	0.4	7 200	9 600	12 000	14 400	14 400	14 400	14 400	1000 MNT/m2 for seed, fertilisers, labour, etc.
greenhouse (area per household)	m2	30								
number of solar greenhouses	nb		100	200	300	400	400	400	400	
total greenhouse area	m2		3 000	6 000	9 000	12 000	12 000	12 000	12 000	
investment (greenhouse) farmers' contrib	CHF/m2	3	9 000	9 000	9 000	9 000	0	0	0	farmers pay 10% of investment
production costs (greenhouse)	CHF/m2	10	30 000	60 000	90 000	120 000	120 000	120 000	120 000	paid by fermers
storage and packaging costs	CHF/kg	0.12	34 920	52 560	70 200	87 840	87 840	87 840	87 840	
TOTAL COSTS			**381 120**	**381 160**	**431 200**	**431 240**	**222 240**	**222 240**	**222 240**	
investment (greenhouse) (from SDC budget)	CHF/m2	27	81 000	81 000	81 000	81 000	0	0	0	SDC pays 90% of investment (included in budget of outcome 3)

TABLE OF BENEFITS for OUTCOME 3

	Unit costs		*2 016*	*2 017*	*2 018*	*2 019*	*2 020*	*2 021*	*2 022*	*comments*
Vegetable production										
yield from open fields	kg/m2	12								
yield from greenhouse	kg/m2	25								
production open field	kg		216 000	288 000	360 000	432 000	432 000	432 000	432 000	
production greenhouse	kg		75 000	150 000	225 000	300 000	300 000	300 000	300 000	total production, for the market and for own consumption
total production	kg		291 000	438 000	585 000	732 000	732 000	732 000	732 000	
losses during storage and marketing	%	10%	29 100	43 800	58 500	73 200	73 200	73 200	73 200	reducing losses could also be an issue for the project
farm gate price of vegetables (open field)	CHF/kg	0.66								corresponds to 1'350 MNT/kg
farm gate price of vegetables (greenhouse)	CHF/kg	0.78								corresponds to 1'600 MNT/kg
value of production open field	CHF		128 304	171 072	213 840	256 608	256 608	256 608	256 608	value calculated after deduction of losses, for the entire
value of production greenhouse	CHF		52 650	105 300	157 950	210 600	210 600	210 600	210 600	production (for sale and own consumption)
TOTAL BENEFITS	CHF		**180 954**	**276 372**	**371 790**	**467 208**	**467 208**	**467 208**	**467 208**	

Cost Benefit Analysis for OUTCOME 3

Additional costs			381 120	381 160	431 200	431 240	222 240	222 240	222 240
Additional benefits			180 954	276 372	371 790	467 208	467 208	467 208	467 208
Cash flow			**-200 166**	**-104 788**	**-59 410**	**35 968**	**244 968**	**244 968**	**244 968**

NPV (13%)	**86 367**	exchange rate 1 CHF = 2'050 MNT	
IRR	**19.19%**		

Comments and assessment:

- The number of families involved is in reality lower than the assumed figures in the table (2016: 67, instead of 300; 2017: plus 89, total 156, instead of 400); more than 1000 have been trained; but only families with vegetable production make a difference in the CBA result.
- The number of greenhouses is in reality smaller than the assumed figures in the table (2016: 50, instead of 100; 2017: 50, instead of 100)
- Greenhouse costs total MNT 700'000 -> 23'000/m2, out of it 10% = MNT 2'300 = CHF 1, instead of CHF 3.
- The yields are realistic for professional growers; for ger dwellers however, these yields might be too optimistic. Furthermore they differ heavily from one vegetable species to another (carrot, turnip, beetroot; 12 kg/m^2 is realistic, could be even higher; tomato in greenhouse: 25 kg/m^2 is only possible under very professional management; realistic figure is 16kg for tomato and 14 kg for cucumber).
  Project target was 3 kg in open field and 8 kg in greenhouse.
  Real figures of 2017 evaluation of harvests in the ger district are 2.2kg/m^2 in open field and 4.25kg/m^2 in greenhouse.
- Farm gate price of vegetables for open field and green house are estimated too high. Ger dwellers have no storage capacity, so they sell it right after harvest. Farm gate vegetable prices in October 2017 are as follows in MNT):

Vegetable species	Farm gate	Wholesale UB	Retail UB
Cabbage	500	700	1700
Onion	800	1100	1300
Carrot	550	600	1600
Turnip	1000	1000	2300
Beetroot	800		
Tomato	2500		

According to this analysis, following figures in the table are too optimistic:

- Number of families involved
- Number of greenhouses in use
- Yield in open field and in greenhouse
- Farm gate price MNT 1’350 for open field and 1’600 for greenhouse products.

On the contrary, the assumed costs per greenhouse paid by farmers is too high.

Furthermore, positive side effects such as gain of knowledge, more social contacts and interaction are not reflected in an economic CBA.

Conclusion:

- The basic parameters in CBA 2 are not realistic and need corrections.
- CBA for poverty focused project activities need a further assessment, taking into account non-economic criteria.

Recommendation for CBA 1 and 2:

- At present, do not invest in further (rather speculative) calculations
- Monitor carefully all relevant data for the CBA 1 & 2 throughout the project period
- Re-calculate the CBA 1 & 2 at the end of the project implementation phase (end of 2019) based on real and verified figures for the whole project period and compare the CBA ex-ante and ex-post assessment

Seed Production Cycle and Seed Reserve Fund					VEGI MTR --- Annex 7
	Seed Grower	**Quality control /IA, IPAS/**	**Seed reserve fund /MFARD/**	**MFARD branches & seed retailers**	**Vegetable Farmer**
Jan					Orders for coming season
Feb			Distribution of available seed funds	Orders for coming season	
Mrz		Seed test /UB/	Contract on seed retail	Transport from UB seed store to soums	
Apr	Mother plant grading	Mother plant inspection	Contract on seed production /20% advance payment/	Seed sales & payment to fund	Seed /cash & partial cerdit/
Mai	Growing seed			Seed sales & payment to fund	Growing vegetable
Jun	Growing seed			Seed sales & payment to fund	Growing vegetable
Jul	Growing seed				Growing vegetable
Aug	Harvesting seed /turnip/	Field inspection			Growing vegetable
Sep	Harvesting seed /cabbage, beetroot, carrot/		2nd payment for seed /40%/		Harvest of vegetables, sales, repaiment e.g. 30.09.2017: 77% of seed credit paid back
Okt	Seed cleaning & grading	Mother plant inspection			Sales of vegetables
Nov	Mother plant storage	Seed test /aimag/	1. Seed quality control and collection of seed from seed producers 2. Seed transportation to seed reserve fund UB 3. 3rd payment for seed /40%/	Final payment to fund	Final repayment for seed
Dez			Announcing price for next year's seed		

From Seed Reserve Fund (SRF) to Sustainable Seed Network

The current activity of the Seed Reserve Fund is very limited and seasonal. Weaknesses of Seed Reserve Fund are:

1. Financial instability: The profit margin is low, only part of two 2 employers' salaries can be covered, dependent from seed sales income. There is only very limited reserve operational cost to extend activities. Some activities dependent from project funds.
2. Activities are focused on few seed producers from UVS Aimag; buyers are mainly (few) MFARD members and local farmers; many farmers buy their seed from private seed producers without established quality control.
3. Management system is not yet well developed (almost complete absence of written documents).

Idea: MFARD could benefit from dealing broad actions in the coming future while establishing a good organizational management system to scale up Seed Reserve Fund activities:

- **Management team development for extended service:** Provide a service (training, consulting, negotiating, coordinating, etc.) for stable cooperation with sector stakeholders, train and prepare young generation and active players including suppliers and buyers. These activities could be an additional income source for MFARD and Seed Reserve Fund for funding its activity and scale up its actions.
- **Innovation to increase productivity of seed farmers:** Provide agro-technological assistance for seed farmers, share international knowledge of model seed farmers (to coordinate and supply needed modern techniques and equipment for currently cooperating seed farmers). Based on traditional knowledge and international GAP of seed production, seed farmers may increase productivity and prevent risks. MFARD and project team could assist to transfer GAP knowledge and methods and invest in own Research and Development (R&D) activities (how to increase productivity and increase quality of seeds, suggest new technologies and technics which will be helpful for farmers to innovate their seed farming system).
- **Cooperation and support from MoFALI:** Negotiate with MoFALI to provide for seed farmers long term lease (more than 4 years lease) for techniques and equipment they need (with less or no interest rate, with favourable payback terms and sales agreement). This activity could be linked to the activity of the National Crop Fund. Define in cooperation with MoFALI binding standards to guarantee seed quality.
- **Financial stability:** The Seed Reserve Fund has to be stabilized financially after the project: Permanent income for SRF from additional service, supply of technics, supply of hybrid seeds, supply of local seeds, scientifically based training and consulting, knowledge transfer, etc.
- **Development of local seed producer cooperatives:** Seed producers should be encouraged to join in cooperatives and to work according to common standards (released species and varieties, field inspection, quality control of seed, etc.)
- **PPP:** SRF should scale up its activities in the chain of Research and Development – Production – Sales within a PPP to overcome the present limited activities and actions and to gain more power and influence on the whole seed market. Addressing wide beneficiaries from seed market and motivating all seed producers, farmers and seed suppliers for cooperation will result in good quality and more stable market prices.
- **Handing over the credit scheme** to a (still to be created) Mongolian Agricultural Credit Scheme.