

Key messages

- Create legal and policy frameworks for securing the structure, funding and personnel of the public extension system
- Facilitate collaboration between research, extension and agricultural administration through the establishment of a multi-stakeholder platform, thematic consortia and advisor teams
- Expand the existing approach of farmer-to-farmer extension through targeted support measures and integration into government programs
- Introduce regular measures for professional development of extension staff incl. phased training, certification of expertise level and mentorship program for young professionals
- Differentiate farmer training by the level of the participants' expertise
- Integrate M&E and feedback mechanism in extension services, especially when targeting individual farms
- Develop digital extension through interlinked platforms and apps with practical utilisation
- Utilise extension services for enforcing laws and regulation, and receiving farmers' feedback

Status quo of crop and horticulture extension services and recommendations for improvement

To increase the productivity and competitiveness of the crop sector in times of climate change and global price increases, a stronger focus on innovation- and knowledge-based production, thus a functioning extension service system is required. Currently, various stakeholders in both the public and private sector engage in crop and horticulture extension. Well-known providers of information, advice and professional support to crop farmers include the Research and Development Centre in Food, Agriculture and Light Industry (RDC), the Aimag Departments of Food and Agriculture (ADFAS), the Soum Divisions of Agriculture (SDAs), the General Agency for Specialized Inspection (GASI), the Mongolian University of Life Sciences (MULS), the Institute of Plant and Agricultural Sciences (IPAS), the Institute of Plant Protection (IPP) and the Mongolian National Crop Farmers' Association (MNCFA). In addition, numerous associations, processors, input manufacturers and traders as well as international projects provide extension services. In most cases, however, the services only target specific groups. Also, small farmers and farmers/herders in remote areas often lack access to such services. With no regular public funding, no coordination among the different service providers, no capacity building structure and no M&E, the current agricultural extension system requires fundamental improvements to meet the expectations of farmers, researchers, policy makers and agricultural administrations across the country.

To identify specific issues that need to be addressed from the perspectives of service providers and farmers, we conducted a survey with 290 farmers and 72 service providers in March and April 2022. The key findings of the survey are summarised in this policy brief.

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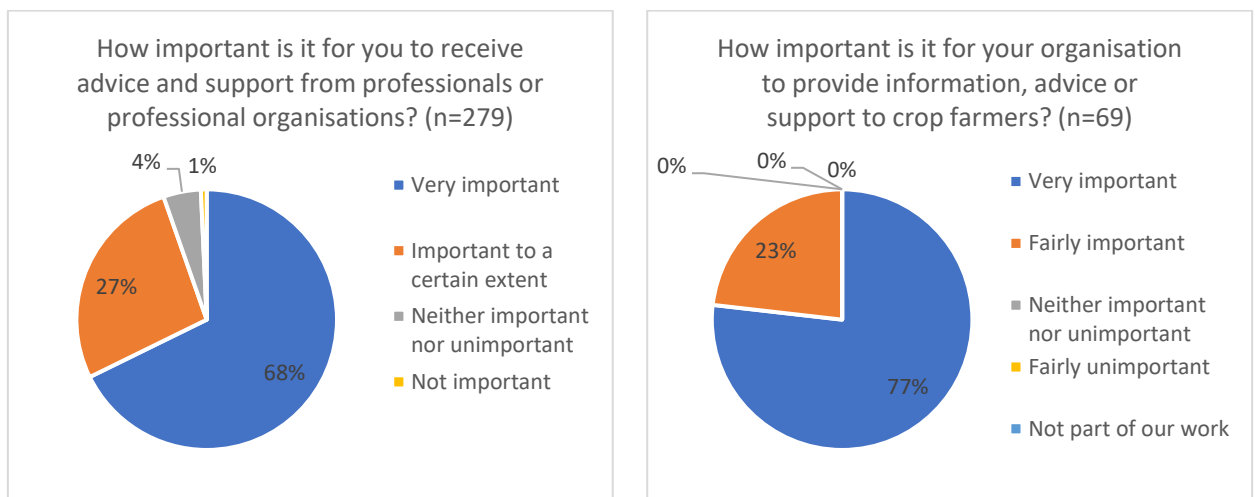




1. Summary of the current situation of crop and horticulture extension service system

Farmers' access to extension services is insufficient compared to their needs

Farmers are well aware of the importance of receiving professional advice and support, and many farmers confirmed that the advice and support they have received in the past have proven useful or very useful. The benefits of extension services range from optimisation of farming technologies to improvements in sales and farm management. The need for extension services is responded to by a variety of organisations despite the lack of policy support and constraints such as lack of budget and staff, and the relatively long distances between service providers and farmers.



Our survey confirmed that, given the various constraints and limitations, service providers are not only highly motivated to assist farmers through professional advice and support services, but also to enable them to fully use their current capacities. Even so, most farmers only receive professional advice and support once a year or less often. Given the perceived importance of extension services, however, farmers wish to have more regular access. Ideally, every farmer would attend a training at least once a year and receive individual advice at least twice a year.

Institutional linkages are well established across policy, research and extension domains

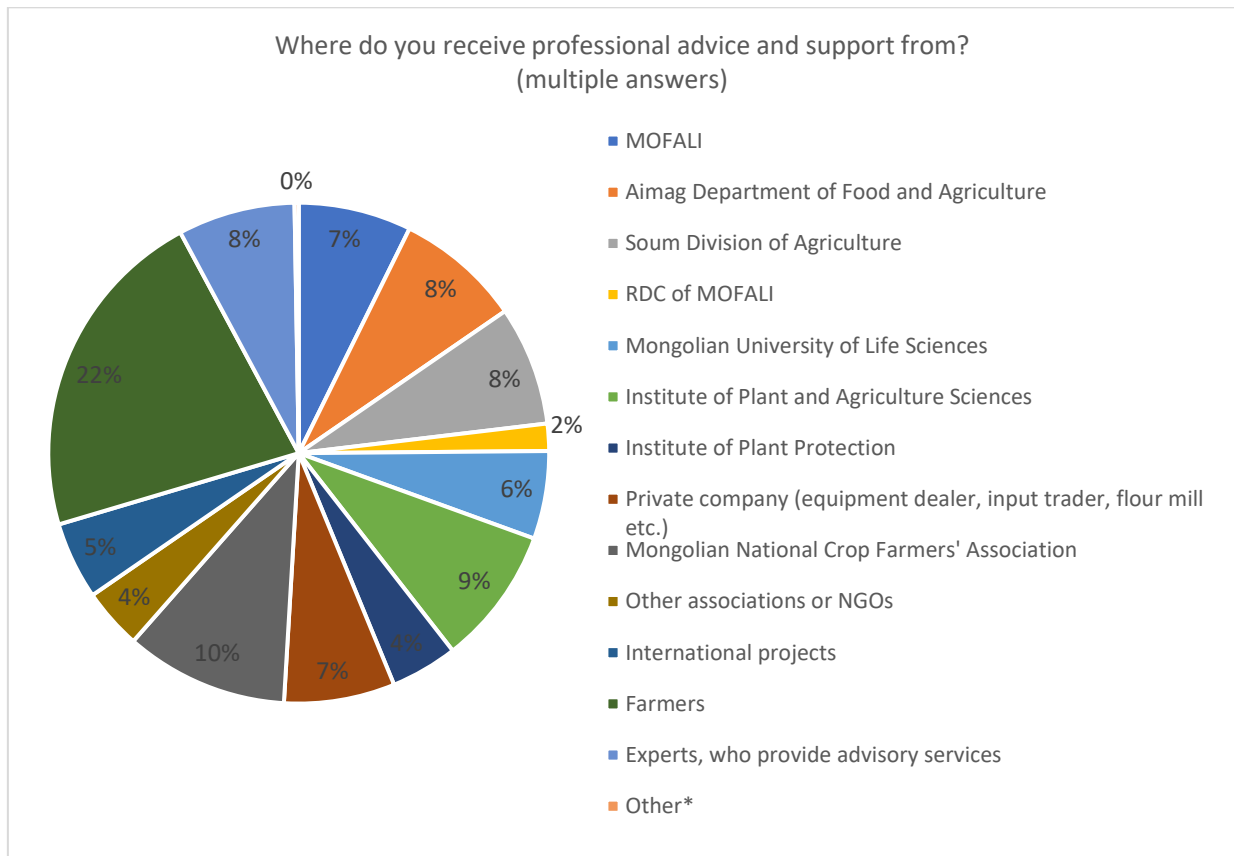
Extension service providers regularly collaborate with MOFALI, regional authorities and agricultural research organisations. This is a key advantage that interventions for improving extension can build on. In fact, many central and regional authorities and research organisations themselves are among the extension service providers. This hybrid structure differs from that in other countries (such as Germany, Australia and New Zealand) where there are clear differences between research, agricultural administration and extension. Yet, we have to accept it is the structure of crop and horticulture extension that has established and adapted itself under Mongolian conditions.

Farmer-to-farmer extension plays a fundamental role

Farmer-to-farmer extension plays a fundamental role in the dissemination of information, knowledge and technologies. Farmers regularly look to fellow farmers, preferably the more experienced ones, when seeking advice. "Practical experience" is considered the most important characteristic of an advisor. The



crop farms of companies such as Gatsuurt, Butliin Undarga and Arvin Khur, which demonstrate modern technologies and provide advice to farmers, have become highly desired destinations of farm visits. Furthermore, the extension activities most favoured by the respondents include experience sharing activities such as exchange meetings, group consultations and mutual farm visits.



MNCFA is widely accepted as a major provider of extension services

Besides the more established institutions such as IPAS and ADFAs, farmers identified MNCFA as a major provider of extension services. This is backed by concrete initiatives such as the video training series conducted in spring 2022 that was identified as a particularly useful extension activity by several respondents. We can assume that farmers prefer to have a farmers' organisation working on behalf and for the farmers. There is also the preference of having one large farmers' organisation providing extension services instead of many small organisations. All these facts and indications add up to the conclusion that one of the key roles of MNCFA is and should be indeed that of a provider of crop and horticulture extension services.

Despite institutional pluralism, the weak public extension service structure remains the key issue

It is a fact that a pluralist system of crop and horticulture extension services has emerged without much political support. Within the system, agricultural research institutes and private sector providers play a key role. However, for private service actors, the provision of extension services is primarily an instrument to achieve their commercial goals. For research institutes, extension service delivery also relates to dissemination/commercialisation of their research results. A major disadvantage in such cases is that the



majority of the services only target farmers – mostly representing medium-sized and large farms, who meet the interests the service providers. Small farmers and farmers in remote areas are often left out. Inclusiveness in crop and horticulture extension services can only be ensured through the establishment of a strong public service structure under MOFALI's leadership, which should reach all farmers and herders across the country through a coordinated network of ADFAs and SDAs.

Digital media play a vital role in information dissemination and farmer training

Not least due to the lockdowns caused by the Covid-19 pandemic, internet and social media have taken over as the main source of professional information for farmers. Farmers have also attended online or video trainings, partly against fees, and the overall feedback is positive. Digital media are also one of the main sources of professional information for many extension personnel and crop sector specialists. The main problem with internet platforms, however, is the lack of a structure in the load of information disseminated and the insecurity in the reliability of the information found (Baast et al., 2020).

2. Recommendations for improving the policy and institutional framework of the extension service system

2.1. Introduce legislation as well as long- and mid-term policies for securing the structure, funding and personnel of the public extension system

Regular provision of publicly funded extension services through ADFAs and SDAs is the only way to ensure that all farmers and herders have access to extension services. The key issues to be addressed in this regard relate to structure, funding and personnel.

The positive developments in the legislation of agricultural extension such as the establishment of a permanent position for coordination of extension services at the ADFAs through the Law on Animal Genetics (2018) and the addition of the paragraph 20.6 on mandatory phased training for agronomists and agricultural engineers to the Law on Cropping (2021) need to be followed up by improvements that are more decisive for securing the funding of extension services provided by ADFAs and SDAs, increasing the number of extension staff and regulating coordination and M&E of public extension services. A draft Law on Agricultural Extension was prepared in 2020, but it did not overcome the hurdles in passing a new law. The experience shows that, instead of a renewed attempt to have a new law on extension, it is more feasible to modify existing laws by adding articles or paragraphs concerning extension, and develop a regulation to be approved by the government or the minister of food, agriculture and light industry. The regulation should define, among others, the mandate of the RDC as the central coordinator and the functions and responsibilities of ADFAs and SDAs regarding the delivery of extension services.

Parallel to the attempts of improving the legislation, long- and mid-term policies on crop and horticulture extension need to be formulated. Long-term policies should be integrated into the "Vision 2050" policy document, in which national-level development goals are defined. Mid-term policies should be integrated into the existing policy documents in the crop and horticulture sector, namely, the "State Policy on Food



and Agriculture (2016-205)” and the “Atar-4 program for sustainable crop sector development” (2020-2025)”.

2.2. Facilitate collaboration between research, extension and agricultural administration through the establishment of a multi-stakeholder platform, thematic consortia and advisor teams

Duplications in services, topics and target groups of different providers of extension services should be avoided and collaboration across agricultural research, extension and administration needs be fostered. Recommendations improving coordination and collaboration of different stakeholders include the establishment of a multi-stakeholder platform, thematic consortia and advisor teams. These elements have already existed in one way or another in the past, but it is important to establish them in a systematic and consistent manner.

The suggested multi-stakeholder platform for collaboration in the extension service system of the crop and horticulture sector could take the form of a Board or a Task Force, which facilitates linkages and synergies between stakeholders through consultation meetings, possibly combined with a digital platform for information and exchange. The Task Force should be linked to MOFALI, but not directly coordinated by the ministry for ensuring that actors from the private sector, farmer associations and the research and education system under the Ministry of Education and Science have equal rights as the actors within the MOFALI system. International examples of multi-stakeholder platforms include the Value Chain Round Tables (VCRTs) in Canada and the Field for Knowledge Integration and Innovation (FKII) in Japan. The VCRTs bring together industry leaders from across the value chain with policy makers for sharing information and building trust across commodity sectors, identifying research, policy, regulatory and technical requirements, creating shared visions and co-operative long-term strategies, and responding to crises. The FKII in Japan consists of over 3,000 members representing producers, private companies, universities and research organisations (OECD, 2019).

The purpose of the suggested “thematic consortia” lies in formalisation of the currently informal linkages between research, extension and agricultural administration (ADFAs and SDAs) and capitalisation on the combined experiences of these different stakeholders for the benefit of farmers. As an example, a possible horticulture consortium would consist of IPAS, ADFAs in priority aimags and farmer associations, NGOs or cooperatives at the local level. Such a constellation would effectively transfer research results from IPAS to farmers, and highlight the role of ADFAs as aimag-level facilitators of extension services. There are many examples of such consortia in other countries. The FKII in Japan is structured in three layers and one of them is a network of thematic R&D consortia. In the Netherlands, the Top Sector Policy subjects the granting of public funds through a matching fund scheme to participation in public-private partnerships with the top sectors (which include agriculture). In each top sector, Top Consortia of entrepreneurs and researchers work together to identify priority areas of research and investment and prepare action plans. The plans are implemented by Top Teams consisting of researchers, entrepreneurs and government officials (OECD, 2019; Erdenebolor, 2021).

The suggested advisory teams may follow the example of Top Teams in the Netherlands for involvement in the implementation of policy action plans, but in our case, they should be practical and focus on the



main task of assisting farmers. The main advantage of advisory teams instead of individual advisors is the combination of different areas of expertise. For example, an advisory team for wheat growers may consist of specialists from ADFA, IPAS and IPP, with the ADFA expert providing information and advice on policy guidelines and support programs while the researchers from IPAS and IPP may provide specific advice on variety and seed, tillage and plant protection.

2.3. Expand farmer-to-farmer extension through targeted support measures

In view of the economic and logistical hurdles in reaching farmers spread over large areas in relation to the overall lack of institutional capacity for provision of extension services, farmer-to-farmer extension seems to be a viable model of crop and horticulture extension. Besides the use of the internet, this is the most cost-effective option for reaching a large number of farmers with information and advice. Hence, it is highly advisable for decision makers to integrate strategic investments in farmer-to-farmer extension into the current government programs for crop and horticulture sector development. For example, extension activities such as exchange meetings, group consultations and farm visits can be facilitated or hosted by farmers or farming enterprises such as Gatsuurt or Arvin khur, which are already recognised as “lighthouse farms”. The role of institutional actors is not to be neglected, but farmer-to-farmer extension should be considered as one of the main extension approaches within a pluralistic framework.

3. Recommendations for improving the quality and contents of extension services

3.1. Introduce regular measures for professional development of extension staff

Farmers need to receive support and advice from competent agronomists and farm advisors. Professional development of extension staff is therefore an issue that both public and private sector organisations providing crop and horticulture extension services need to focus on.

Public crop advisors currently include extension coordinators and agronomists in all 21 ADFAs and soum agronomists in about 80 soums. The competence of the approximately 100 aimag and soum agronomists is decisive for the quality of the advice and support service they deliver to farmers. Hence, MOFALI should capitalise on the newly added paragraph 20.6 in the Law on Cropping and introduce mandatory phased and certified training for them. The training programs and modules need to be developed yet, along with a regulation for the implementation, but they should take into account the fact that the agronomists are also extension staff, thus requiring competence in extension methods.

Professional development also concerns extension staff outside the MOFALI system, such as researchers at MULS, IPAS and IPP and farm advisors at private companies e.g., equipment dealers and input suppliers. These groups also need to be targeted by training, preferably conducted by RDC, whereas there should be different levels of training. For example, farm advisors at input supplies need to be regularly trained on the topics on which they advise farmers. On the other hand, researchers who provide extension services are more likely to need training in communication and extension methods so that they can communicate their knowledge and advice effectively and in a way that farmers can understand.



Regular training of extension staff should be supplemented with the provision of publications, manuals, guidelines and online resources. For young agronomists who freshly graduated from the university, a trainee or mentorship program might be useful. In a mentorship program, the young agronomist will be guided by an experienced agronomist during the initial period of his/her professional career. This model can also be used for agronomists working at crop farms.

3.2. Differentiate farmer training by the level of the participants' expertise

Providers of farmer training need to acknowledge that different farmers have different levels of knowledge and, accordingly, their training needs are different. New farmers require easy-to-understand and practically oriented contents while advanced farmers, given their already comprehensive practical experience, might be more interested in deepening their theoretical knowledge. Therefore, a classification system to be followed by all training providers should be developed. For example, six levels from A1/beginner to C2/advanced (A1, A2, B1, B2, C1, C2) can be defined, and for each level, the overall volume measured in hours as well as the shares of theory, practical contents and field exercises in the total volume should be determined. That would make it possible for the training providers to target the right audiences and for farmers to find the training best suited to their levels of expertise.

3.3. Integrate M&E and feedback mechanism in extension services targeting individual farms

An organisation or an individual who provides advice to farmers should be accountable for the truthfulness and effectiveness of their advice. Accountability will need to be ensured through the integration of a systematic M&E mechanism. Ideally, the implementation of the advice by the client farmer needs to be monitored by the advisor and the result should be measured and evaluated. For example, there should be an estimation of how much yield increase was achieved through the implementation of the advice. On the basis of evaluation, the advisor can provide further advice to the client farmer on, for example, how to maintain or further increase the benefits of the solution adopted or, if needed, what adjustments or other solutions need to be introduced.

3.4. Develop digital extension through interlinked platforms and apps with practical utilisation

Digital information and knowledge platforms as well as remote advisory services are widely seen as effective solutions for delivering information, advice and training to a large number of farmers regardless of geographical distance. The development of a digital extension framework consisting of information, knowledge and communication platforms and apps therefore needs to be systematically established. Duplications should be avoided, and instead of many small platforms, few centralised should be preferred. Currently, the MNCFA initiative nationalfarmers.mn can be considered as a central information and knowledge platform in the crop and horticulture sector. From the public sector side, MOFALI and RDC may develop a platform to inform farmers on policies, regulations and policy support through a combination of text and video contents that can be linked to the existing platform plant.mofali.mn, which is primarily used for ensuring the traceability of plant products.

The suggestions of farmers that participated in our survey for useful purposes of apps include:



- determination of fertiliser, pesticide and irrigation norms based on satellite and sensor data,
- creation, updating, exchange and discussion of real or simulated field records, and
- registration of quality and origin certificates of farm produce, which can inform buyers about the quality of the foods they are buying and connect them with farmers, if needed.

There are numerous other opportunities for digital extension services, which need to be explored further.

3.5. Utilise extension services for enforcing laws and regulation, and receiving farmers' feedback

Our survey confirmed that the priority topics of crop and horticulture extension – identified from the perspectives of both farmers and service providers – widely match the current legal reforms in the crop sector. Hence, if adequately utilised, extension services possess a tremendous potential for ensuring the implementation of new laws and regulations. For this purpose, the new laws and regulations shall be embedded in the contents delivered to farmers through various extension activities by public sector providers (RDC, ADFAs and SDAs) and public research institutes. Furthermore, extension can not only communicate the legislation to farmers, but also channel farmers' feedback back to the decision makers.

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