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IMPROVING ADVISORY SERVICES IN UZBEKISTAN IN FRAMEWORK OF AFACIRATEC PROJECT

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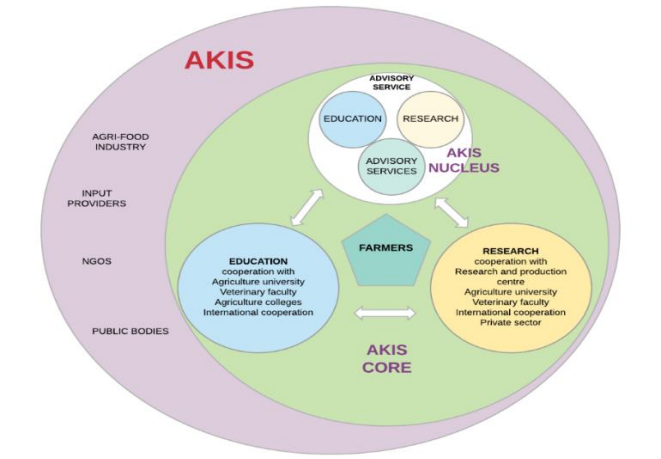
Abstract

Improving advisory services in Uzbekistan is a vital part of the country's development agenda, as reflected in the Agri-Food Sector Development Strategy (2020-2030). The strategy recognizes the importance of improving public sector services, opening up new markets for farmers and agribusinesses and introducing new technologies to the sector. In this endeavor, the AKIS play a decisive role, contributing directly to the achievement of many of goals.

The system of knowledge and innovation in agriculture AKIS in Uzbekistan was developed by the Ministry of Agriculture of the Republic of Uzbekistan and approved by Presidential decree dated of February 3, 2021 No. UP-6159 "On further improvement of the system of knowledge and innovation, and provision of modern services in agriculture."

Scheme of Advisory service AKIS in Uzbekistan



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Important reform has taken place in 2022 where the Law of Dehkan Farms classified common, household plots as «dehkan farms». Dekhkan farms keep around 60% of all agricultural production in the country on parcels in average less than 0.4 ha in size. The small Dekhkan farms mostly grow vegetables and raise livestock. Crops that were state priority for decades, as wheat and cotton, are usually grown on larger farms in average size around 40 ha.

However, ensuring equal access to extension services for Uzbek dehkans compared to large farmers remains a challenge that the government must address to improve the situation rural livelihoods and overcome rural poverty in the country. To address this challenge, we tried to answer the following questions during the three years of the RATES project: What are the local realities and challenges faced by dehkans? What services do dehkans need to overcome these constraints and gain better livelihood opportunities? What type of advisory and training support is available and how effective are they in reaching dehkans? What gaps exist in service support and how can the private and public sectors and other actors work together to fill them? These questions formed the basis for the RATES project.

In the first year of the project, one of the goals was to develop an action plan. The result in the first year of the project was facilitating access for farmers to improved agricultural technologies, technical knowledge, qualified training, information on government incentives such as subsidies and grants for farmers.

A consultative meeting was held each month by action plan, the participants of which were farmers, agriculture producer, project specialists and experts of AKIS.

In addition, farm household surveys were conducted in the study areas of Tashkent region to collect baseline data on production, income and pest control practices among cotton and wheat producers.

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In the second year of the project **49** household plots with a total area of **3.1** hectares were selected for implement the project. High-yielding new varieties of alfalfa, strawberries, sweet maize, garlic, tomato was demonstrated.
For third project year **73** household plots with a total area of **4,52** hectares were selected to implement the project for 2025 year. High-yielding new varieties of sweet pepper, strawberries, potato, cucumber was demonstrated.
Monitoring of the project was carried out by project working group and AKIS specialists in farmers' fields to ensure the smooth operation of the project.
During three year of the RATES project period was organized training for **120** advisory consultants and **550** dehkans (small family farmers), provided 65 seminars and **25** demo-farms days for dehkans. For the training of dehkans was published **15** technology extension manuals related to AFACI projects.

1. Introduction

The general aims of RATES project is following:

- Contributing to strengthening the agricultural extension system through a highly skilled extension specialists and creating an effective network among stakeholders and agriculture producers (farmers and dehkans).
- Training of trainees based on foreign experience in agricultural extension services
- Increasing farmers' competitiveness and production through providing training, diversified on-farm skills and knowledge transfer
- Facilitating the integration of RATES spesialists with overall AKIS system in rural regions through synchronized location-based trainings

Aims of RATES project for the firs year

- Development and planning roadmaps, detailed work plan, selection of the local farm consultants (trainees) from regional AKIS centers,
- preparation of necessary materials for training including training program,

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materials, determining basic advisory skills based on local needs of dehkans,
- engagement of experts of AKIS, determining the targeted group of dehkans ;
- purchasing necessary training books, equipment etc.,
- translate training materials into local languages.

Aims of RATES project for the second year
- planning study visits and visiting to Korea, with project team members,
- conducting ToT programs to field consultants from headquarter and local AKIS centers;
- preparation of action plan for training of dehkans and other targeted group of beneficiaries from rural regions;
- establish trial plots in dehkans field
- transfer the knowledge and conducting demo-field days,
- make materials devoted to new variety of agriculture crops,
- innovation in agriculture and disseminate them among dehkans;
- increase dehkans awareness about innovations in agricultural production by attracting new agriculture crops.

Aims of RATES project for the third year
- Preparation of integration strategy for RATES with the regional branches of AKIS system through RATES team;
- facilitate and support RATES functioning, communicating and collaboration with other donors such as KOPIA.
- Synchronize the training planning and regular events in cooperation with NCKIA.
- Facilitating in systematizing the strong bridge of communication between science&innovation and dehkans in rural regions.
- Knowledge transfer, reporting, publications, planning of sustainability activity after ending of project.

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2. Methodology

The methodology used in the project performs two functions:

Function 1: Provision of general information and linkages

Function 2: Transfer of Knowledge through technical advice

The following methods were used:

- Farmers group approach
- One-on-one approach
- Dissemination of knowledge through mass/social media
- Basic advisory skills
- intensive short courses

The following skills for advisory consultants and farmers (dehkans) was provided:

- Personal Development
- Communication and Building Relationships in Advisory Work
- Teamwork and Team Leadership
- Rhetoric / Presentation
- Self-Management and Time Management
- Project Management
- Shaping Advisory Processes
- Handling Difficult Advisory Situations / Change Management
- Moderation Management
- Marketing of advisory services
- Event Management
- Advising and Supporting Groups
- Introduction to Coaching

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The following skills for farmers (dehkans) was provided:

- Using new methods of agro technology
- Using water sawing technology
- Using energy sawing technology
- Using pesticides
- Introduction to new varieties of crops

3. Results

One of the results of RATEC project was contributing to strengthening the agricultural extension system through a highly skilled extension specialists and creating an effective network among stakeholders and agriculture producers. In the first year of the project, one of the goals was to develop an action plan. The result in the first year of the project was facilitating access for farmers to improved agricultural technologies, technical knowledge, qualified training, information on government incentives such as subsidies and grants for farmers.

A consultative meeting was held each month by action plan, the participants of which were farmers, agriculture producer, project specialists and experts of AKIS.

In addition, farm household surveys were conducted in the study areas of Tashkent region to collect baseline data on production, income and pest control practices among cotton and wheat producers.

Monitoring of the project was carried out by project working group and AKIS specialists in farmers' fields to ensure the smooth operation of the project.

As part of the project, capacity-building trainings were organized for extension specialists and farmers in the Tashkent region, which includes 18 districts. Capacity building training for extension workers focused on improving agricultural practices and pest control in cotton and wheat.

The result in the second year of the project was facilitating access for dehkans to improved agricultural technologies of new crops varieties, technical knowledge,

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pest control, using water and energy saving technologies. For this reason **49 household plots** with a total area of **3.1 hectares** were selected to implement the project for 2024. High-yielding new varieties of alfalfa, strawberries, sweet maize, garlic, tomato are being demonstrated. Farmers Training will be conducted by Tashkent region AKIS Office as part of the RATES initiative.

High-yielding new varieties of alfalfa (variety - Toshkent 3091, number of household plots 9, area - 1.23 hectares), strawberries (variety - Tong Ifori, number of household plots 10, area - 0.33 hectares), sweet maize (variety - Future 100, number of household plots 10, area - 1 hectare), garlic (variety - Feruza, number of household plots - 10, area – 0,33 hectare), tomato (variety - Winning, number of household plots 10, area - 0.23 ha) were chosen.

The new varieties of these crops, developed and cultivated in the research institutes, was produced higher yields and enhanced returns from farming. Dehkans have been provided for their cultivation and the fields are set to organized. The training materials and facilities were prepared for the cultivation of new crops. The capacity building and skill generation for advisory service providers and dehkans was organized. Demo days was organized during the harvest season, and a manual detailing planting procedures and other aspects of the agro technology was prepared.

The result in the third year of the project was facilitating access for dehkans to improved agricultural technologies of new crops varieties, technical knowledge, pest control, using water and energy saving technologies. For this reason **73** household plots with a total area of **4,52** hectares were selected to implement the project for 2025 year.

High-yielding new varieties of sweet pepper (variety -Lastochka, number of household plots 15, area – 1,0 hectares), strawberries (variety - Cobra, number of household plots 20, area - 0.4 hectares), potato (variety - Gala, number of household plots 5, area – 0,3 hectare), cucumber (variety - Ajax, number of household plots - 8, area – 0,32 hectare), tomato (variety - Balaban, number of

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household plots 25, area - 2.5 ha) was planted supported and financed by RATES project.

The new varieties of these crops, developed and cultivated in the research institutes, was produced higher yields and enhanced returns from farming. Dehkans have been provided for their cultivation and the fields are set to organized. The training materials and extension manuals were prepared. The capacity building and skill generation for advisory service providers and dehkans was organized. Demo days was organized during the harvest season, and a manual detailing planting procedures and new agro technology was published.

3-1 Main topic of the meeting GFRAS online meeting

The meeting focused on the activities undertaken since the Uzbekistan project review meeting including distribution of seed of promising varieties, training farmers, and developing technical manuals. The conversation ended with future plans, including the distribution of materials, preparation of reports, and strategies for sharing project successes with the wider community.

Advisory from GFRAS

The PI of the RATES Uzbekistan project Sanjar Adilov discussed the ongoing project in Uzbekistan, which focuses on training trainers of Uzbekistan's Agricultural Knowledge and Innovation Systems (AKIS) on innovative technologies to increase farmers' competitiveness. The project's objectives include facilitating the distribution of seeds of high-yield crop varieties, studying yield gaps between research and farmers' fields, enhancing extension professionals and farmers' knowledge and skills in seed production, and reinforcing the research extension system in Uzbekistan. PI also mentioned that the project is implemented by the National Centre of Knowledge and Innovation in Agriculture, in collaboration with the Tashkent regional AKIS office.

The project is promoting new high-yielding varieties of crops such as alfalfa, strawberries, sweet maize, garlic, and tomatoes. The project aimed to demonstrate these varieties to around 50 household plots in the Tashkent region. PI also

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highlighted the importance of resistance to insects and diseases in these new varieties. He further detailed the activities undertaken, including training farmers and providing recommendations to household plot owners. Specific examples were given, such as the successful control of strawberry mites and the improvement in tomato yields. PI also mentioned the involvement of experts from research institutes and the provision of recommendations on agriculture technology and pest control. PI mentioned that tomatoes and strawberries are primarily grown in protected environments, such as greenhouses, due to the challenges of pest control and disease management in open fields in Uzbekistan. PI mentioned that the majority of tomato farmers now use protected cultivation methods, which have become more common and cost-effective.

The project has published five manuals and these are being distributed to the target group. He also mentioned the training of over 30 farms on new agricultural technologies and water-saving methods. PI then outlined their future plans, which include selecting new households for the next project year, developing training materials, establishing drip irrigation systems in household fields, and conducting capacity-building trainings. He also mentioned the organization of a field day in October or November to demonstrate the project's outcomes and share them with the target group. On the soft copies of the manuals, PI mentioned that these could be accessed through the project's website.

PI mentioned that they would publish articles on their achievements and share them on their website and in scientific journals. They also discussed the challenges faced by small farms in adopting new technologies and the need for training and support. GFRAS suggested that they could highlight their project's contributions, such as energy and water savings as mentioned in the presentation early on rather than waiting till the end of the project.

• Follow-up Actions

1. PI shared presentation file, website link, and meeting notes with AFACI and GFRAS via email.

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2. The scientific article “Development of farm advisory service in Uzbekistan in framework of RATES project” was published in “European journal of Interdisciplinary research and development (volume 35, January 2025)

4. Project achievements

As part of the RATES project, targeted actions were taken to strengthen the human resource base of the agricultural extension system. "Training of Trainers" (ToT) programs were implemented, reaching 120 agricultural consultants and equipping them with a broad range of competencies, including agricultural technologies, effective communication, project and time management, moderation, and marketing of advisory services. Simultaneously, training was provided to 550 dehkans (smallholder family farmers), focusing on the introduction of innovative agro-technologies, rational water and energy use, and integrated pest management. The project organized 65 training seminars and 25 field demonstration days, fostering practical knowledge acquisition and enabling feedback from farmers.

The project actively promoted institutional integration of RATES into the national AKIS system by coordinating activities between the National Centre of Knowledge and Innovation in Agriculture (NCKIA) and regional AKIS centers.

A sustainable multi-actor platform for interaction between researchers, consultants, and dehkans was established, promoting two-way knowledge exchange. Researchers shared the latest applied research outcomes, while dehkans contributed empirical field-level feedback. Extension agents played a key role in translating scientific knowledge into practical application in the field.

The project supported the establishment of 122 demonstration plots covering 7.62 hectares, where high-yielding, disease-resistant crop varieties developed by research institutes were introduced and tested:

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Crop	Variety	Number of Household Plots / Area (ha)
Alfalfa	Toshkent 3091	9 plots / 1.23 ha
Strawberries	Tong Ifori, Cobra	30 plots / 0.73 ha
Sweet maize	Future 100	10 plots / 1.0 ha
Garlic	Feruza	10 plots / 0.33 ha
Tomato	Winning, Balaban	35 plots / 2.73 ha
Sweet pepper	Lastochka	15 plots / 1.0 ha
Cucumber	Ajax	8 plots / 0.32 ha
Potato	Gala	5 plots / 0.3 ha

To enhance awareness and practical knowledge of dehkans, the project prepared and published 15 extension and technical manuals addressing: Cultivation technologies for new crop varieties, Water- and energy-saving farming practices, Pest and disease management methods. All materials were translated into local languages to ensure accessibility and wide outreach among rural populations.

Demonstration plots served as "field laboratories," enabling practical testing and dissemination of innovative agricultural technologies. Particular attention was paid to the adoption of protected cultivation methods (e.g., greenhouses for tomatoes and strawberries), which significantly reduced exposure to climatic risks and disease pressures. Success stories, such as the effective control of strawberry mites and increased tomato yields, were documented and presented during field demonstration events.

The project was implemented in close coordination with international partners, including GFRAS, AFACI, and KOPIA, which contributed to knowledge exchange and technical capacity-building.

The Uzbekistan project team actively participated in regional coordination meetings and presented the project's results and methodologies. During GFRAS online sessions, emphasis was placed on the insect- and disease-resistance of new crop varieties, and on enhancing access to extension content and demonstration opportunities.

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To ensure long-term impact, the project initiated the institutionalization of training programs, digitalization of educational content, and formalization of communication channels between research organizations and rural communities.

※ Quantitative goals

Indicators	1st year (Dec. 2022-Nov. 2023)			2nd year (Dec. 2023-Nov. 2024)			3rd year (Dec. 2024-Nov. 2025		
	Plan (A)	Output (B)	Rate (%)	Plan (A)	Output (B)	Rate (%)	Plan (A)	Output (B)	Rate (%)
Analysis of current state of infrastructure in rural extension system	1	1	100	1	1	100	1	1	100
Establishment of action plan for rural extension	1	1	100	1	1	100	1	1	100
Education and training for capacity building related to rural extension	15	15	100	25	25	100	25	25	100
Establishment of technology extension manual related to AFACI projects	5	5	100	5	5	100	5	5	100
Development of technology extension manual	1	1	100	1	1	100	1	1	100
Publication of articles	-	-	-	-	-	-	1	1	100

4-1 Achievement evidence

•Baseline secondary data collection on existing agricultural extension system in Uzbekistan
• Baseline and end-line survey to assess the impact of project intervention
• Capacity building training (for farmers and agricultural technicians of local government)
• Specialist consultative meeting
• Participatory field monitoring and consulting
• Method and result demonstration of the NCKIA-released varieties and other improved
agricultural technologies
• Use of ICT for interaction among the disciplinary scientists, farmers and extension workers
• Data management and analysis

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- Publications
- Focus Group Discussions
- Output sharing Workshop
- Case studies

5. Conclusion

The RATES project (2022–2025) has played a critical role in strengthening Uzbekistan's agricultural extension system and improving the livelihoods of smallholder farmers (dehkans). Over the three years of implementation, the project successfully built the capacity of 120 advisory consultants and 550 dehkans through 65 training seminars, 25 demonstration farm days, and the establishment of 122 demonstration plots on 7.62 hectares. These plots showcased high-yielding, disease-resistant varieties of key crops such as alfalfa, strawberries, sweet maize, garlic, tomato, sweet pepper, cucumber, and potato.

Economic Efficiency and Resource Savings of Demonstrated Crops

Crop	Variety	Yield Increase (%)	Economic Effect (USD/ha)	Water Consumption Reduction (%)	Pesticide Use Reduction (%)
Garlic	Feruza	+25–30	+1,000–1,200	~20	~15
Sweet Pepper	Lastochka	+35–40	+1,500–1,700	~25	~20
Potato	Gala	+20–25	+800–1,000	~18	~12
Tomato	Winning,	+30	+1,300	~30	~25
	Balaban	+35	+1,500	~30	~25
Alfalfa	Toshkent 3091	+25–30	+500–700	~15	~10
Sweet Maize	Future 100	+20–25	+900–1,200	~22	~15
Strawberry	Tong Ifori,	+30–	+2,000	~28	~20
	Cobra	+40	+2,500	~25	~20
Cucumber	Ajax	+20-25	+700	~15	~20

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The demonstrated high-yielding crop varieties provided significant economic benefits to dehkans, increasing profitability per hectare due to higher yields and reduced post-harvest losses. Adoption of improved agro-technologies resulted in 15–30% water savings and 10–25% reduction in pesticide use. These innovations not only enhanced farm income but also promoted sustainable agricultural practices, contributing to resource efficiency and environmental protection.

The project produced 15 extension manuals, along with leaflets and posters, all translated into local languages to ensure accessibility for rural communities. Knowledge transfer was achieved through Training-of-Trainers programs, farmer field schools, and the introduction of innovative technologies, including protected cultivation and water- and energy-saving practices.

Close collaboration with AKIS centers, research institutes, and international partners such as AFACI, GFRAS, and KOPIA enabled two-way knowledge exchange, combining scientific expertise with farmers' practical experience. This integration strengthened institutional linkages between research and rural communities, contributing to more effective advisory services.

Overall, RATES has established a sustainable foundation for modern agricultural extension services in Uzbekistan. The project's outcomes—enhanced farmer skills, increased crop productivity, better access to innovations, and improved advisory systems—are expected to have lasting impacts on rural development, farmer competitiveness, and the wider adoption of innovative agricultural practices.

6. Future plan and recommendations

Future activities include:

- Organization of a field day in October–November 2025,
- Implementation of drip irrigation systems in newly selected household plots,
- Preparation of new training materials and manuals,
- Publication of scientific outputs

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The RATES project has defined a set of cross-cutting implementation objectives aimed at improving the agricultural extension system in Uzbekistan. These objectives were formulated during national assessment workshops and in-depth discussions held during GFRAS online meetings. The following main planned project activities are summarized below:

- Strengthening the institutional capacity of AKIS regional centers to provide farmer-focused advisory services.
- Establishing sustainable integration mechanisms between research institutes, extension officers and farmers.
- Developing a unified structure for disseminating knowledge and innovations through local extension networks.
- Strengthening the capacity of extension officers through regular train-the-trainer and capacity building programs.
- Promoting the adoption of high-yielding, climate-resilient and pest-resistant crop varieties in household farming systems.
- Improving farmers' access to information on government subsidies, modern agricultural inputs and new technologies.
- Improving the effectiveness of knowledge dissemination using digital tools and printed knowledge dissemination guides.