Food and Agriculture Organization of the United Nations

STRENGTHENING CAPACITIES OF THE GOVERNMENT OF ANDHRA PRADESH TO SUPPORT FARMERS TO ADOPT SUSTAINABLE AGRI-FOOD SYSTEMS

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SDGs:	2 ZERO HUNGER · 6 CLEAN WATER AND SANITATION · 15 LIFE ON LAND
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Contact Info:	FAO Representation in India FAO-IN@fao.org

Implementing Partners

Ministry of Agriculture and Farmers Welfare, Government of India; State Government of Andhra Pradesh.

Beneficiaries

Farmers, extension officers, technical experts and the State Government of Andhra Pradesh.

Country Programming Framework (CPF) Outputs

CPF 2019-2022

Priority Area 1. Output 1.1: Improve capacity of institutions to deliver extension messages on irrigation water management including gender sensitive and gender responsive approaches.

Priority Area 2: Enhance food and nutrition security systems.

Priority Area 4: Increase farmers' incomes through improved skills, increased market linkages and value addition in the agriculture sector.

Background

Agriculture is the primary source of livelihood for about half the population in India, which is also one of the main producers of milk, legumes, jute, rice, wheat and cotton. Due to soil erosion, burning of crop residues and a high use of chemical pesticides and fertilizers, it is essential to transition to sustainability to increase agricultural productivity and enhance both food and ecological security in the country.

Agriculture in Andhra Pradesh depends mostly on rainfall, so the monsoon and seasonal conditions play a crucial role and have been highly affected by climate change, leading the State of Andhra Pradesh, as many others in India, to experience soil degradation, yield reductions and seasonal yield gaps, which have increased the costs of production. Furthermore, other safety concerns such as the COVID 19 pandemic affected agricultural value chains, giving rise to the need to modernize the agricultural sector with technologies and marketing strategies that will lead to profitable and sustainable production systems.

To address these challenges, the Government of Andhra Pradesh (state government) launched farmer facilitation centres (FFCs) as an efficient platform to disseminate knowledge and provide farmers with services and assistance to improve year-round productivity, profitability and sustainability.

However, since the state government identified several fields to be improved, this project was designed to strengthen scientists, technical officers and extension officers capacities in supporting the FFCs and assisting farmers transition to sustainable agrifood systems, including the adoption of good agricultural practices (GAP) to achieve organic and safety certifications. Moreover, the project also aimed to develop a methodological framework on agriculture, horticulture, dairy, poultry and fisheries, elaborate educational curricula and build a strong monitoring and evaluation (M&E) framework to ensure the transition and the sustainability of agrifood systems.

Impact

The project promoted the transition to sustainable agrifood systems through capacity-building activities and training at several levels. Farmers, scientists, extension officers and technical staff in agriculture and allied sectors increased their technical skills and competences on good farming practices, and the Government of Andhra Pradesh reinforced its existing programmes of farming field schools (FFSs) and FFCs through the implementation of GAP materials and organic certification protocols. Furthermore, reducing the use of pesticides, protecting water resources and training the farmers to achieve year-round crops through GAP promoted environmental sustainability and increased the farmers' incomes.

Achievement of results

The project achieved the expected goals and completed all the activities. As part of the outputs, three curricula and several materials were developed to understand and integrate GAP protocols into FFSs and train farmers and extension officers in the use of seasonal crop plans. The important role of women farmers was highlighted during the training sessions, encouraging them to participate in every activity and to be involved in decision-making processes. Although the FFSs had been in place for some years already, the materials and manuals prepared for the workshops led farmers to improve their knowledge on the correct application of seeds and fertilizers, reduce tillage, limit the use of pesticides and protect water resources. This activity, together with the specific GAP policy for the six agroclimatic zones of Andhra Pradesh, helped farmers avoid yield gaps and adapt crops to each zone's criteria, which enhanced farmers' productivity and income.

In addition, the project reinforced local and state markets and promoted GAP licences and certificates from the National Programme for Organic Production (NPOP), in order to protect quality standards and offer a premium price to farmers.

An illustrated training manual on implementing India Good Agricultural Practices (IndGAP) was elaborated to broadcast the standards from the Quality Council of India (QCI) and promote food safety certifications. Regarding the methodological framework to transition into sustainable agrifood systems, several workshops and training sessions were conducted for 130 officers from state and district institutions. Some of them also participated in a training-of-trainers (ToT) to become focal experts, train further state officers, and conduct future workshops.

Several monitoring and evaluation (M&E) tools were developed to assess the transformation of agrifood systems, focusing also on health and hygiene criteria of farms, and safe harvesting and transportation of the agricultural products to the local markets. A scoping study was carried out to raise awareness on GAP certifications and its benefits for farmers in Andhra Pradesh. A policy dialogue for supportive law, policy and programmes commenced with the formation of a Technical Expert Group (TEG), drawing from the expertise and knowledge of the five state-identified sectors. During the state-level policy dialogue process, some gaps were identified in the existing policy framework from the practical experience, while recommendations were provided in the five sectoral policy briefs on agriculture, horticulture, dairy, poultry and fishery.

Implementation of work plan and budget

All of the outputs were successfully completed within the initial budget, and, in general, almost every activity was carried out in a timely manner. However, due to the absence of some relevant stakeholders and lengthier processes than expected in conducting the case studies and the policy brief consultations with the Andhra Pradesh State Seed Certification Authority (APSSCA), the state government and the technical experts, a no-cost extension was approved to complete the revision of the policy briefs and include the recommendations emerging from the policy workshop. These delays led to an update in the project's work plan to provide the policy framework needed to achieve the sustainable agrifood systems transition.

Regarding environmental risks, the IndGAP protocol already included mitigation measures to prevent economic, social and environmental risks, so no risks were encountered during the project because it was already designed in alignment with FAO and government policies. Moreover, all stakeholders from the state government, the state Department of Agriculture and the project beneficiaries worked in close collaboration to implement GAP and ensure sustainability of the results.

Follow-up for government attention

Although the activities were successful and paved the way towards sustainable agrifood systems, the central question of every policy dialogue is related to building more supportive frameworks to establish sustainable agrifood systems. To this purpose, it is advised that the state government integrate the curricula and digital materials into further FFSs to ensure the adoption of GAP and reduce any negative impacts produced by chemical pesticides and fertilizers. It is also recommended that the state government use the videos elaborated during the project and the experiences from the FFCs to support farmers during the transition to sustainable agrifood systems. In addition, it is suggested that the state government continue to apply the FFS curricula and the IndGAP training manuals to raise awareness on GAP and encourage farmers to recognize the need for different production systems.

With regard to the policies, the recommendations included in the five policy briefs suggested possible pathways to conduct more supportive follow-up actions. In order to help Andhra Pradesh promote its certified agricultural products, a scoping study with two agricultural value chain specialists was undertaken based on field missions in Andhra Pradesh, which provided recommendations to enhance domestic sales and overseas exports of certified agriproducts, which will need to be taken forward by the state government.

Sustainability

1. Capacity development

The project reinforced capacities at different levels. At an institutional level, the sustainable framework and monitoring tools provided the Department of Agriculture in Andhra Pradesh with the means to implement and promote GAP in each agricultural sector and agroclimatic region. Moreover, scientists, technical officers and extension officers improved their technical skills through ToTs to become experts on the inclusion of GAP protocols and be able to train further officers and farmers on the adoption of sustainable farming practices

The curricula and digital materials elaborated for specific crops helped improve and expand the existing FFS programme with the integration of GAP and NPOP certification protocols. Through the FFS, the state government increased farmers' capacities to better adopt GAP and enhance their household incomes. Moreover, the project contributed indirectly to establishing state-wide FFCs, and some key state platforms to deliver crucial agriculture, horticulture, animal husbandry, fishery and sericulture services. This strategy will continue to reinforce the competences of farmers and other relevant stakeholders, along with the technical agreement between the state government and the Indian Council of Agricultural Research (ICAR), which ensured that it would embed the results into state and local institutions. As a result, the state government could build a whole new state agency, the Andhra Pradesh State Organic Products Certification Authority (APSOPCA), which would help promote IndGAP and facilitate yield export under quality standards at a premium price, not only domestically but also potentially in more than 100 countries around the world.

2. Gender equality

The activities were designed to include women at every stage of the project. Particular attention was paid to the gender balance among both the extension service providers and the FFS participants. Women farmers participating in FFS were selected from existing women's self help groups and local farmer groups. In addition, the FFS approach helped to raise awareness among stakeholders' groups about the importance of their roles to adopt GAP, resulting in greater involvement of women in making decision processes and aspects such as seed selection, transplanting and irrigation. The project was guided by a senior female officer of the state government, while the role of FAO project manager was also filled by a woman.

Both women and men farmers benefited from the project and received the exact same training, although women farmers were also provided with some hand-holding support. Moreover, the policy briefs elaborated during the activities considered the gender dimension when reviewing the relevant sectoral policy and legal frameworks.

3. Environmental sustainability

The project contributed to mainstreaming environmental sustainability by promoting sustainable farming practices, enhancing soil health, and minimizing the use of chemical fertilizers and pesticides.

Through its initiatives, the project contributed to establishing environmentally-conscious agricultural practices such as the correct use of seeds and the limited use of fertilizers, which had a positive effect on the broad ecological balance in agriculture.

Furthermore, through the good practices' framework, the outputs ensured optimized yields, the implementation of water-saving strategies and promoted a sustainable use of water resources for improved water management. All of these aspects contributed to food security and environmental sustainability.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

Through the FSS and the new methodology created during the project, extension officers and farmers were able to apply GAP to their daily activities, improving the selection of crops and seeds and reducing the use of chemicals and pesticides, thus producing healthier and more nutritious food items and accessing cleaner water sources. In addition, selecting better seeds and protecting crops helped improve the quality of products and decrease seasonal yield gaps, therefore increasing the farmers' incomes. The project's work towards sustainable agrifood systems in the state was performed considering a more remunerative and regenerative path, to remain as a sustainable source of life and livelihoods for the next generation.

The Andhra Pradesh Departments of Agriculture and Horticulture promoted and protected human rights throughout the project, in particular those of vulnerable groups, including women and other minorities, and encouraged them to participate in FFS to promote GAP.

5. Technological sustainability

The digital trainings provided during the project were appropriate, flexible and tailored to meet the specific needs of farmers, which contributed to ensuring the sustainability of results. Through the workshops, extension officers acquired skills to implement GAP through the ongoing FFS programmes and to monitor and evaluate the transformation of food systems in a timely manner. A farmer-friendly GAP manual and six training materials describing crop planning in the six different agroclimatic regions of Andhra Pradesh ensured compliance with GAP protocols and strengthened farmer institutions at local and state levels, while directly enhancing farmers' capacities to apply digital materials to their farming practices.

6. Economic sustainability

This project was designed to enhance productivity and protect yields losses in a sustainable manner, thus contributing to improving farmers' livelihoods and income. Since the FFCs are knowledge-based tools that were already available to the beneficiaries and stakeholders, the methodology developed during the project was affordable for farmers and counted on the support of the Government of Andhra Pradesh, which covered part of the training and certification expenses. Moreover, the Government of India could potentially expand this methodology to other country regions to start its implementation at ground level.

During the policy dialogue sessions conducted to address the new and existing policies, several institutions and agencies showed interest in the strategy to transition towards sustainable agrifood systems, and several recommendations were proposed, including the need to allocate more financial resources and make appropriate budgetary allocations. This approach to partnership laid the foundation to continue expanding the project's outputs and ensure the results sustainability.

Documents and outreach products

Documents

- **APSSCA, FAO, Government of Andhra Pradesh & ICAR**. 2023. *Policy briefs on Supporting sustainable agrifood systems in Andhra Pradesh (agriculture, horticulture, dairy, poultry and fishery)*
- **FAO.** 2023. *FFS Curriculum*. https://t.ly/ZBhC8
- **FAO.** 2023. *Training Manual – An illustrated training manual on implementing IndGAP to ensure food safety certification.*
- **FAO.** 2024. *Scoping Study.*

Outreach material

- **Rai, S.** 2023. *Andhra Pradesh Becomes First State in India to Achieve IndGAP Certification*. Press coverage. https://t.ly/V9hHg
- **Srikanth, G.** 2024. *QCI's INDGAP certification yields positive results in Andhra Pradesh*. Press coverage. Vijayawada (India). https://t.ly/Umybr
- **Subba Rao, GVR.** 2023a. *Andhra Pradesh: Chief Minister Jagan Mohan Reddy launches INDGAP programme.* Press coverage. Vijayawada (India). https://t.ly/KA9Xv
- **Subba Rao, GVR**. 2023b. *'Gunvatta Sankalp' deliberates on quality interventions in agriculture.* Press coverage. Vijayawada (India). https://t.ly/vM0nR
- **The New Indian Express**. 2023. CM *Jagan launches INDGAP Verification Programme*. Vijayawada (India). https://t.ly/L37wZ

ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	**Reduce negative environmental impacts of agriculture and enhance farmers' incomes through adoption of sustainable agrifood systems**		
Outcome	Capacities of key stakeholders at various levels enhanced to support Andhra Pradesh's farmers to adopt sustainable agrifood systems		
	Indicator	Specific methodologies and capacities in place to assess and support farmers to adopt sustainable agrifood systems	
	Baseline	0	
	End Target	- One framework and methodology for adoption of sustainable agrifood systems. - Two policy briefs on sustainable agrifood systems transitions and farmer facilitation centres (FFCs). - Training of officers, scientists and farmers. At district level: ten officers per district (130 in total) and 20 farmers per district (260 in total). At State Level: Ten scientists and 20 officers.	
	Comments and follow-up action to be taken	The QCI developed the IndGAP certification scheme to promote GAP in India, considering the needs of the domestic and international markets. The certification is done in five categories: fruits, vegetables, composite crops, tea, green coffee and spices. The state government provided human, financial and logistic resources to develop a methodology and three curricula and facilitated the implementation of IndGAP certificates for farm production in the state. These licences set the ground for improved quality in the production systems and enhanced food security and hygiene. In this regard, the Government of Andhra Pradesh also established the APSOPCA in 2022. In April 2023, the chief minister of Andhra Pradesh launched the IndGAP verification programme to make it compatible with other certification standards from the QCI. Through GAP certification, the state government facilitated yield export under quality standards at a premium price, not only domestically but also in more than 100 countries in the world. As part of this project's work, the institution APSOPCA provided certification services under the IndGAP certification scheme in the State.	
Output 1	Methodological framework for sustainable agrifood systems transitions developed in consultation with key stakeholders		
	Indicators	Target	Achieved
	Methodological framework, policy dialogues, policy briefs	- One framework and methodology for adoption of sustainable agrifood systems. - Two policy dialogues. - Two policy briefs on agrifood systems transitions and FFCs.	Yes
Baseline	0		
Comments	The policy dialogues were conducted over some period of time, in order to properly consider all the aspects and engage different stakeholders step by step until the final workshop in Vijayawada. Furthermore, gathering all the information from the dialogues, processing it and refining the details took also some time.		
Activity 1.1	Policy dialogues		
	Achieved	Yes	
	Comments	A policy dialogue process was initiated at state level with the formation of a steering committee of technical experts, and five draft policy briefs were prepared for five specific sectors. Several sector-wise discussions to address the existing policies were held in September 2023 at Vijayawada (Andhra Pradesh) during a workshop co-organized by the state government, ICAR and FAO.	
Activity 1.2	Methodology development		
	Achieved	Yes	
	Comments	A simple methodology was prepared and used as a framework during the dialogue process to draft the policy briefs. It addressed some short-term, medium-term and long-term changes that were required for the transition to a more sustainable agrifood system in the state. The technical experts followed the same methodology to provide recommendations for the transition.	
Activity 1.3	Policy briefs		
	Achieved	Yes	
	Comments	Working in close collaboration with the technical experts, five policy briefs were co-developed to address agriculture, horticulture, dairy, poultry, and fishery. These reports included the stakeholders' input from the policy dialogue. It is advised that, after the national elections in 2024, all relevant points and appropriate recommendations be included in the state policy to continue supporting the transition to sustainable agrifood systems.	

Output 2	Curriculum and training materials on sustainable agrifood systems developed for key stakeholders		
	Indicators	Target	Achieved
	Curriculum framework, and training materials on sustainable agrifood systems.	- Three curricula. - Three training materials.	Yes
Baseline	0		
Comments	A workshop was conducted to develop a curriculum and a framework for sustainable food systems. Several crop-specific training materials on agriculture, horticulture, dairy, poultry and fishery were also developed in collaboration with IndGAP protocols, in order to integrate them as part of the existing FFS in the state. These guides included the stakeholders' perspective from the policy dialogue.		
Activity 2.1	Curriculum workshops		
	Achieved	Yes	
	Comments	A state-level workshop with key stakeholders was organized to develop crop-specific curricula and a framework to transition into sustainable agrifood systems. As part of the recommendations, the state government should integrate this curriculum framework into the ongoing FFSs to ensure GAP and reduce the negative impact of chemical pesticides and fertilizers.	
Activity 2.2	Review training materials		
	Achieved	Yes	
	Comments	With the support of some universities, the state government developed several packages and practices to implement in specific crops. These practices were reviewed to identify any possible gaps and improve them before integrating them.	
Activity 2.3	Training materials		
	Achieved	Yes	
	Comments	A crop-specific guideline including GAP protocols was developed and implemented in the Andhra Pradesh climatic zone at every critical crop stage. These materials were developed both in English and in the local language in order to use them in FFS.	
Output 3	Capacities of scientists, officers at state and district-level, including last-mile extension service providers enhanced on sustainable agrifood systems		
	Indicators	Target	Achieved
	Key stakeholders, including farmers are trained on sustainable agrifood systems.	Training of officers, scientists and farmers: - Ten officers per district (130 in total) and 20 farmers per district (260 in total). - Ten scientists and 20 officers at state level.	Yes
Baseline	0		
Comments	Scientists, extension service providers and officers at both state and district levels, enhanced their capacities on sustainable agrifood systems.		
Activity 3.1	Training of state-level officers		
	Achieved	Yes	
	Comments	A total of 30 state scientists and officers were trained on agrifood systems transitions. A state-level training was organized with the state government on agrifood systems for scientists and officers from the agriculture and horticulture departments. Both scientists and officers developed a framework on food systems transitions to integrate it into the ongoing FFS programme.	
Activity 3.2	Training of master trainers at district level		
	Achieved	Yes	
	Comments	Following the same path and with the assistance of the state government, a training of trainers (ToT) was organized at district level on sustainable agrifood systems for several scientists and officers, who improved their capacities to continue training further agriculture officers at an institutional level. At a local level, the agriculture and horticulture staff promoted the transition into sustainable agrifood systems. This ToT is a valuable resource for the state government to use to train additional farmers on agrifood systems transitions and to adopt GAP so they can apply for GAP and organic certifications.	

Activity 3.3	Technical backstopping and supervision		
	Achieved	Yes	
	Comments	Both the Department of Agriculture and the Department of Horticulture developed their capacities on agrifood systems transitions. Furthermore, the Department of Agriculture has enough human resources to provide field support to lower administrative offices, so they can implement the sustainable agrifood systems and the GAP curriculum in FFS in an efficient manner. The APSSCA is accredited by QCI as a certifying body to procure GAP certifications in the state of Andhra Pradesh. In addition, APSSCA played a critical role in promoting group-based GAP certifications in the state.	
Output 4	Framework for monitoring and evaluation and documenting lessons learned, including best practices, developed		
	Indicators	Target	Achieved
	Monitoring and evaluation framework to monitor work on sustainable agrifood systems in place.	- One M&E manual on sustainable agrifood systems. - Three videos. - At least two exchange meetings. - One case study.	Yes
Baseline	0		
Comments	An M&E framework to monitor the agrifood systems in place was developed, including recommendations for improvement and best practices.		
Activity 4.1	M&E framework and workshops		
	Achieved	Yes	
	Comments	A workshop was organized to elaborate several protocols and to monitor and evaluate specific impacts affecting sustainable agrifood systems. The state government has been implementing FFS across the state based on the GAP-focused curriculum. A robust monitoring framework was established for effective evaluation of food systems transition in the state.	
Activity 4.2	Tools		
	Achieved	Yes	
	Comments	Working with the APSSCA, several participatory community videos were prepared and six case studies specific to six agroclimatic zones were elaborated to describe food systems transitions. The APSSCA developed these tools with the guidance and support from the Department of Agriculture and FAO. The state government can use these videos and case studies for further dissemination and promotion of GAP and organic certifications, which promote the transition towards agrifood systems.	
Activity 4.3	Exchange meetings		
	Achieved	Yes	
	Comments	Several exchange meetings were organized for high-level state officers to share the experience in Andhra Pradesh in other national and international platforms. A high-level delegation from the state government visited a symposium facilitated by FAO (Bangkok, October 2022), to learn about different strategies from the One Country, One Priority Programme implementation in various countries in the region, where the topics addressed included inclusive models to transform agrifood systems and family farming, empowering women in agriculture and bringing youth in agriculture. The state government committed to adopt: i) a blue transformation for better aqua-food production; ii) better nutrition standards by reducing food losses and waste; iii) production of safe and healthy food for nutritional security, and iv) models for sustainable and inclusive value chains through better production, processing, marketing, and consumption.	
Activity 4.4	Dissemination		
	Achieved	Yes	
	Comments	After consulting with the state Department of Agriculture and the APSSCA, six study cases and two community videos (short and long duration) were developed to raise awareness on the need to transform food systems. It is recommended that the state government use these videos and the experiences from FFCs to support farmers during the food system transition.	

Partnerships and Outreach
For more information, please contact: Reporting@fao.org

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