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ORGANISATIONAL INNOVATIONS

TO BOOST THE AVAILABILITY OF SAFE, HEALTHY VEGETABLE PRODUCTION IN LOCAL MARKETS IN CAMBODIA

Cambodian agriculture represents 22.2% of the country's GDP (World Bank national accounts data, 2022). Yet, the population is still suffering from nutrient deficiencies and food insecurity. The country remains dependent on imports of low-cost — and sometimes poor quality — agricultural products (particularly vegetables).

A report published in 2022 by Cambodia's Ministry of Agriculture, Forestry and Fisheries indicated that 2,500 tons of vegetables are produced domestically every day: a quantity that is dramatically insufficient to meet the country's demand, requiring around 900 tons of vegetables to be imported every day (Sokney, 2022).

In parallel, consumers are becoming increasingly aware of the need to eat quality products and the dangers of pesticide residues. The Covid 19 crisis further heightened food and nutritional insecurity in the country and, despite decades of improvement in this area, the prevalence of moderate or severe food insecurity in Cambodia reached 51.10% in 2022 (FAO).

Siem Reap Province is experiencing significant urban growth, hosting the majority of domestic tourism (over 4 million people before the Covid 19 crisis). As local production is not very diversified or competitive compared to products from neighbouring countries, this growth has generated increasing demand for fresh products, which is mainly met by imports from Thailand and Vietnam.

Since 2010, together with its local partner the Cambodian Institute for Research and rural Development (CIRD), GRET has been implementing the APICI project (Semi-intensive Agriculture for smallholder farmers using less inputs). The project aims

to develop sustainable agriculture for smallholder farmers in Siem Reap province, and to improve their livelihoods and food security. The programme is boosting their capacities to increase and diversify their production while respecting the environment and the health of producers and consumers, thanks to agroecological practices. It is also strengthening local food supply chains and facilitating rural and urban households' access to diversified, good-quality, affordable products, through structuring of farmers' organisations and provision of support to farmers when implementing quality standards and low-cost certification processes, such as the Participatory Guarantee System (PGS).

INTRODUCTION OF AGROECOLOGY PRACTICES

Prior to the project intervention, farmers were producing rice and vegetables individually in large, medium and small mono-cropping farms. They had no knowledge of agroecology and were mainly using chemical fertilisers and pesticides, which were often incorrectly dosed and poorly timed. Based on an initial assessment of farms and villages, an agro-ecological transition programme was developed, tested and adapted to suit farmers' constraints and needs. It is a long-term, iterative process aimed at adjusting the programme's intervention strategy, based on farmers' situations and evolution of the context: climate change, environment pollution, loss of soil fertility, economic shocks, etc.

STRUCTURING OF PRODUCERS' GROUPS

Initially, there was no connection between producers and local collectors. Producers were selling their products directly to middlemen in their area, with no possibility of comparing their prices to market prices before selling.

In 2011, the APICI project started to support farmers to form producers' groups to increase and diversify local production of vegetables, rice and chicken. The underlying idea was to improve members' technical knowledge on agroecological practices through training and peer discussions, and facilitate market access for local, healthy food products, enabling producers to obtain fair prices thanks to better connection with local collectors and a transparent market information system.

17 Vegetable Producer Groups (VPGs) were formed with a total of 323 members producing on average 100 tons per month, and 15 Chicken Producer Groups (CPGs) with a total of 185 members producing on average 2 tons per month. To date, 14 VPGs are still operating (i.e. a total of 239 members) and

CONSUMERS VISITING THE ECOFARM AGRICULTURAL COOPERATIVE DURING A CONSUMER DAY ORGANISED IN MAY 2024

MEMBERS OF ECOFARM SELLING THEIR MEMBERS' HEALTHY PRODUCE AT THE SIEM REAP WEEKEND MARKET

eight local buyers were strengthened to work with them and purchase vegetables (on average 100 tons per month). In addition, eight CPGs are still operating (146 members) and three local collectors purchase an average of 2 tons of chicken per month from them. For rice, one group of paddy quality seed producers was created. Paddy farmers mainly produce rice for their own consumption, or sell it in their village, therefore they do not need a group for marketing purposes. They did however implement System of Rice Intensification (SRI) practices at individual level, and they developed a process of certification solely for seeds.

STRUCTURING OF AGRICULTURAL COOPERATIVES

In 2015, a study assessing the level of adoption of agroecological practices among all VPG vegetable producers concluded that only 7 VPGs out of 17 were applying more than three agroecological techniques — such as solid & liquid compost, bio-pesticides, diversified crops, etc. — on their farms. The producers asked for support from the project to strengthen their agroecological techniques and the quality of their products, thanks to a common standard. They also expressed their wish to become a larger group. This is how the project facilitated the creation of Ecofarm, a group of farmers producing healthy vegetables.

In 2015, Ecofarm started out with 60 farmers from 7 vegetable producer groups, living in three communes in Sotr Nikum district (Kien Sangkae, Danrun and Tayaek). These farmers undertook to grow healthy vegetables respecting common quality standards based on certain agroecology principles, such as sustainable management of soil fertility, diversification of production, reduction of chemical inputs, and recycling; but also through the elimination of chemical pesticides, reduction of chemical fertilisers and non-use of GMO seeds, in order to avoid pesticide residues on products and pollution of the environment, to respect human health and

conserve biodiversity. These standards were defined by the group itself. In complying with them, the producers are able to supply Siem Reap markets with products that respect the environment, producers and consumers. The goal of this group is to boost the sale of local, good-quality products and sustainably increase its members' incomes. Ecofarm's members defined a shared vision represented by the motto "Be Healthy Together".

On 18 January 2019, with the support of the APICI project, Ecofarm officially registered as an Agricultural Cooperative (AC). Named "Sovathapheap Thoamacheat Agricultural Cooperative", at the time it had 79 members, including 59 women. Currently, it has 125 members, including 93 women.

THE PARTICIPATORY GUARANTEE SYSTEM (PGS) – THE EXAMPLE OF ECOFARM GROUP

A Participatory Guarantee System (PGS) is a "locally focused quality assurance system that certifies producers based on active participation of stakeholders and is built on a foundation of trust, social networks, and knowledge exchange" (IFOAM definition 2008). They were initially developed to certify organic farming.

However, the certification process is one of the most criticised aspects of organic farming. It is based on a third-party verification system that assesses individual farms to ensure that their products meet organic standards. Third-party certification (TPC) is not appropriate for small farms. It is costly and complex, and it encourages specialisation of small farms for easier certification, to the detriment of crop diversification. Peer certification processes have emerged as a more appropriate solution than TPC, as they are particularly well suited to local markets and short supply chains.

A PGS enables producers, consumers and distributors to participate directly in:

- the choice and development of specifications, adapted to suit the context, demand and farming practices;
- development and implementation of certification procedures;
- certification decisions.

Thanks to their technical knowledge, producers verify and control agroecological practices, while consumers guarantee neutrality of controls. Control visits are also an important opportunity for exchange of know-how and human contact.

This internal system has a low cost compared to a third-party intervention, as there is no need to pay for an external certification. It is time-consuming mainly for the internal committee that conducts inspections in the field and issues the yearly certificate.

The objectives of a PGS are to increase the visibility of local, good-quality products in domestic markets, to ensure reliability and traceability for consumers, and reward farmers' efforts in favour of agroecological transition. To achieve this, Ecofarm members collectively established a common standard prohibiting the use of chemical pesticides and minimising the use of chemical fertilisers by applying agroecological techniques. The PGS quality standards were developed by the AC's producers themselves. This ensures that standards are in line with their needs and that they can implement them in their farms. In 2023, 71 of the AC's 125 members were part of the PGS.

As Ecofarm members produce mainly leafy vegetables that are quite resistant, they found it easy to stop using chemical pesticides completely and switch to integrated pest management. After just

QUALITY STANDARDS DEFINED BY ECOFARM

> **SEED SELECTION:** open pollination seeds and hybrid seeds; no GMOs are allowed.

> **FARM SYSTEM MANAGEMENT:** the plot is dedicated to production of healthy vegetables and separated from the chemically grown plot by a living fence and/or sufficient spacing.

> **SOIL FERTILITY MANAGEMENT:** use of natural fertilisers (solid compost, animal manure, biomass fertiliser for basal 1.5-2 Kg/m^2); to boost soil fertility, use is based on crop development.

> **PEST MANAGEMENT:** only bio-pesticides made from local resources are allowed, spraying every 3-5 days, use of integrated crop protection measures (IPM), use of chemical pesticides is prohibited.

> **CULTIVATION METHOD:** farmers should guarantee at least 3 types of vegetables on their farm by adopting crop association (crops in alternating rows), inter-cropping and crop rotation.

> **HARVESTING MANAGEMENT:** at least 7 days before harvesting, stop spraying bio-pesticides and stop using liquid compost.

CROP ASSOCIATION AT AN ECOFARM MEMBER FARM

a few years of support from the project, they had become accustomed to applying natural fertilisers and easily reached an agreement on this standard.

Ecofarm has a clear management structure, with three people on the management committee, two agroecology advisors, two collectors, six group representatives and five people on the certification committee — all having been elected by its members. To ensure that the vegetable supply complies with the group's standards, Ecofarm carries out a series of inspections in the field every year before making a final decision leading to issue of the certificate.

The assessment consists of five steps:

- **First and second visits.** The group representative conducts an inspection in the field with producers from the group he or she is responsible for.
- **Third visit.** The agroecology advisor from the AC conducts a cross-check inspection and provides advice on the techniques missing, based on the report from the group representative's first and second inspections.
- **Fourth visit.** The group representative conducts an inspection in the field to see whether the producer is following the agroecology advisor's advice or not.
- **Fifth visit.** The last one before issue of certificates to producers: local authorities, the project team, consumers, buyers and the Provincial Department of Agriculture are invited to conduct the final check and validate the number of healthy vegetable producers complying with all technical standards. Despite the low cost of the PGS, it is necessary to pay for participants' expenses — initially covered by the project — to launch the process.

The average price of vegetables at the farm gate is on average 500 riels/kg higher than that of vegetables from conventional farms. Today, PGS certification is in line with the expectations of consumers who are increasingly demanding with regard to the quality of products. Certification processes such as the Participatory Guarantee System (PGS) ensure the quality of products and contribute to the improvement of food supply chains by providing rural and urban households with access to diversified, good-quality products at affordable prices. In parallel, producing certified products enables farmers to sell their products at a premium price and therefore to improve their incomes.

RELATIONSHIPS WITH VALUE CHAIN ACTORS AND ROLE OF THE WEEKLY FARMERS' MARKET

In 2017, the Provincial Department of Trade's local authorities collaborated with the project to set up a weekly market to sell local, healthy products in the city of Siem Reap. Every year, the local authorities of the Provincial Department of Agriculture participate in an inspection in the field.

Consumer days are organised twice a year to bring buyers and final consumers closer to farmers, during visits to the field where farmers present their activities. Visitors can talk with farmers and try their hand at making bio-pesticides or compost to gain better understanding of farmers' practices and build trust.

Inter-professional meetings are also organised twice a year, notably with shops specialised in organic and agroecological products, in order to identify bottlenecks (adjustment of supply to demand, transport problems, regularity of supplies, etc.) and find solutions together with the cooperative. ■

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RESOURCES TO LEARN MORE

> Page presenting the Apici project on the GRET website:
https://gret.org/en/projet/strengthening-agroecology-stakeholders-in-cambodia-2/

1. Acronym for the French project title *Assurer la sécurité alimentaire et nutritionnelle en Afrique de l'Ouest et dans les Suds* — Ensuring food and nutrition security in West Africa and the southern hemisphere.

Photos: © GRET
Page 1: Mrs. Thai Soda, deputy chairperson of the Ecofarm agricultural cooperative, presenting her harvest.