



Food and Agriculture
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The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

**Views, Experiences and Best Practices as an example of possible options for
the national implementation of Article 9 of the International Treaty**

Note by the Secretary

At its [second meeting](#) of the Ad hoc Technical Expert Group on Farmers' Rights (AHTEG), the Expert Group agreed on a revised version of the [template](#) for collecting information on examples of national measures, best practices and lessons learned from the realization of Farmers' Rights

This document presents the updated information on best practices and measures of implementing Article 9 of the International Treaty submitted by Southeast Asia Regional Initiatives for Community Empowerment (SEARICE) on 1 August 2019.

The submission is presented in the form and language in which it was received.



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Basic information

- Title of measure/practice

Participatory Plant Breeding in Lao PDR

- Date of submission

July 31, 2019

- Name(s) of country/countries in which the measure/practice is taking place

Lao PDR

- Responsible institution/organization (name, address, website (if applicable), e-mail address, telephone number(s) and contact person)

Rice Research Center (RRC)
National Agriculture and Forestry Research Institute Ministry of Agriculture and Forestry (NAFRI)
Lao PDR

Dr. Chanthakhone Boualaphanh
Director

- Type of institution/organization (categories)

Government/ Research Institution

- Collaborating/supporting institutions/organizations/actors, if applicable (name, address, website (if applicable), e-mail address, telephone number(s))

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Description of the examples

Mandatory information:¹

- Short summary to be put in the inventory (max. 200 words) including:
 - Implementing entity and partners
 - Start year
 - Objective(s)
 - Summary of core components
 - Key outcomes
 - Lessons learned (if applicable)

In 2000, the Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), an NGO operating at regional level, and the Agriculture Research Center (RRC) of the National Agriculture and Forestry Research Institute (NAFRI) together with the Department of Agriculture in Lao PDR launched a program called Biodiversity Use and Conservation in Asia Program (BUCAP), which later merged with another program called Community Biodiversity Development and Conservation (CBDC), and implemented from 2006-2010. Activities centered/centred around Farmer Field Schools (FFS) on rice breeding, through which farmers co-defined breeding objectives, and together with scientists of the ARC, identified suitable parent materials. Researchers and extension agents were trained as FFS facilitators, while policy makers from local and national levels were consciously involved in all key activities to raise awareness and generate support for the work of farmers on the ground. As a result of the initiative, 55 high performing rice varieties were developed, of which some exhibit adaptation to specific conditions, including tolerance to drought or acid soils; one variety was granted official release in 2018, while others are still going through the same process.

(180 words)

- Brief history (including starting year), as appropriate

In 2000, SEARICE together with partners from National and local government institutions of each country, launched BUCAP in Bhutan, Laos and North Vietnam. Building on the lessons from the CBDC, a similar program implemented in the Philippines, Thailand, South Vietnam and in 9 other countries in Africa and Latin America, BUCAP embarked on multi-stakeholder partnerships and empowering methodologies such as Farmer Field Schools. BUCAP was meant to explore collaboration with plant breeding institutions in developing capacities of farmers in crop breeding with particular focus on rice as the staple crop in Southeast Asia. BUCAP was implemented from 2000 to 2005. In 2006, it was merged with CBDC. CBDC-BUCAP was implemented in Bhutan, Laos, the Philippines, Thailand, and Vietnam from 2006 to 2010. From 2011-2014, CBDC-BUCAP was taken over by Democratizing Agricultural Research and Extension (DARE), which focused on mainstreaming work. Then from 2014-2018, Sowing Diversity = Harvesting Security (SDHS) took over with the aim of scaling up the earlier achievements in PPB.

- Core components of the measure/practice (max 200 words)

The main component of the measure was the capacity development of farming communities on rice breeding using farmer field school (FFS) as an approach. Farmers enhanced their knowledge and skills on rice breeding through experiential learning. Breeding objectives were defined by farmers and, together with

¹ This mandatory information is required in order for the measure/practice to be included in the Inventory.



the ARC, they identified parent materials for their breeding. Included in their field trials were actual crosses that farmers made, selection from segregating lines provided by ARC who conducted pre-breeding based on the breeding objectives defined by farmers, and varietal evaluation for local adaptation and rehabilitation of mostly traditional varieties.

Another level of capacity building was for the researchers and extension agents who were trained as FFS facilitators. The capacity development designed for them was transformational meant to develop them as facilitators of learning and co-innovators, conscious of the inherent capacities of farmers.

Another important component was the link with policy work. Policy makers from local and national levels were consciously involved in all key activities to raise awareness and generate support for the work of farmers on the ground. They are invited to participate in farmers' field days, farmers' policy and technical conferences, seed fairs, among other activities.

- Description of the context and the history of the measure/practice is taking place (political, legal and economic framework conditions for the measure/practice) (max 200 words)

SEARICE advocates for policies that recognize, strengthen, and institutionalize community initiatives in conservation and development of plant genetic resources (PGR). SEARICE develops the capacities of its partners for policy advocacy and campaign work through participatory action research and lobbying for policies that protect farmers' rights.

Like in other countries where SEARICE implements PPB, the work in Laos was meant not only to conserve and develop PGR but more importantly, to empower farming communities. This empowerment helped farmers recognize their inherent capacities and realized that they can secure their local seed systems to avoid dependence on the government or seed companies. This is very important in Laos where the formal seed systems can only provide around 10% of the seed demand in the country.

This initiative enjoyed strong support from local and national government of Laos because they valued the contribution of farmers in the conservation and sustainable use of PGR.

The diverse landscape and ecosystems in Laos made it difficult for ARC to develop rice varieties that will perform well in the whole country. ARC acknowledges that the active participation of farmers in plant breeding is key to addressing the gaps in the seed supply system in the country.

- To which provision(s) of Article 9 of the International Treaty does this measure relate

- Art. 9.1
- Art. 9.2a
- Art. 9.2b
- Art. 9.2c
- Art. 9.3

Other information, if applicable

- Please indicate which category of the Inventory is most relevant for the proposed measure, and which other categories are also relevant (if any):



No.	Category	Most relevant ²	Also relevant ³
1	Recognition of local and indigenous communities', farmers' contributions to conservation and sustainable use of PGRFA, such as awards and recognition of custodian/guardian farmers		
2	Financial contributions to support farmers conservation and sustainable use of PGRFA such as contributions to benefit-sharing funds		
3	Approaches to encourage income-generating activities to support farmers' conservation and sustainable use of PGRFA		
4	Catalogues, registries and other forms of documentation of PGRFA and protection of traditional knowledge		
5	In-situ/on-farm conservation and management of PGRFA, such as social and cultural measures, community biodiversity management and conservation sites		
6	Facilitation of farmers' access to a diversity of PGRFA through community seed banks ⁴ , seed networks and other measures improving farmers' choices of a wider diversity of PGRFA.		
7	Participatory approaches to research on PGRFA, including characterization and evaluation, participatory plant breeding and variety selection		
8	Farmers' participation in decision-making at local, national and sub-regional, regional and international levels		
9	Training, capacity development and public awareness creation		
10	Legal measures for the implementation of Farmers' Rights, such as legislative measures related to PGRFA.		
11	Other measures / practices		

- In case you selected 'other measures', would you like to suggest a description of this measure, e.g. as a possible new category? _____
- Objective(s)
 - a) Conserve and develop rice genetic diversity;
 - b) Improve livelihoods through sustainable use of rice genetic diversity;
 - c) Strengthen farmers' management system of their plant genetic resources;

² Please select only one category that is most relevant, under which the measure will be listed.

³ Please select one or several categories that may also be relevant (if applicable).

⁴ Including seed houses.



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- d) Strengthen and develop capacities of local institutions and other stakeholders to support farmers' management of their PGR diversity; and
- e) Affect policy environment with positive changes and actions at local and national levels towards the protection of farmers' rights over their PGR.

- Target group(s) and numbers of involved and affected farmers⁵

Over a thousand farmers were trained through FFS and more than 50 villages benefited from the rice varieties and seeds developed by farmers.

- Location(s) and geographical outreach

Lao PDR

- Resources used for implementation of the measure/practice

Resources used for implementation of the measure/practice: Around USD1 million was the cost of the program for 18 years

- How has the measure/practice affected the conservation and sustainable use of plant genetic resources for food and agriculture?

Rice farming in the project sites used to be limited to household consumption, even with hunger periods of around 3 to 4 months in some communities. But farmers made a considerable achievement through PPB, having produced 55 rice varieties of very good performance—some are drought tolerant and some are tolerant to acid sulfate soil. Some communities of indigenous peoples in Luangprabang for instance, claimed to have closed the three-month hunger gaps they used to experience because of the benefits from the rice varieties.

SEARICE farmer-partners have become vital sources of seeds especially since the government and commercial seed producers could not meet the demands in volume and quality. The dependability of rice varieties developed, and seeds produced by farmers was demonstrated when disaster struck some villages in Laos in 2008 resulting in massive loss of harvest. SEARICE farmer-partners provided the villages with the needed volume of seeds to replace crops damaged by flood and strong typhoon.

Farmers gained government support on three major fronts: partners' acquisition of diverse segregating materials from ARC, the provision of technical backstopping by researchers whose salaries were shouldered by the government, and the incorporation of PGR conservation and development in the extension system of four provinces which later expanded to additional 3 provinces.

- Please describe the achievements of the measure/ practice so far (including quantification) (max 200 words)

Apart from developing 55 good performing rice varieties, the varietal diversity of rice grown per community has increased from 4-5 at the start of the project to 10-15 varieties based on the end-line assessment conducted in the project sites. Farmers involved in the PPB interventions continue to develop

⁵ Any classification, e.g. of the types of farmer addressed, may be country-specific.



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varieties that are adapted to specific ecological conditions and perform well under extreme environmental conditions caused by climate change, thus contributing to the development of resilient communities. In Laos, 8 drought-tolerant varieties and another 8 varieties which can be grown under flooded conditions were developed through PPB. Some farmers also started producing and selling good quality seeds from their own selections. This resulted to food sufficiency and increase in income. More than 4,000 farmers have been trained on crop selection and breeding since 2000 and most of these farmers continue to do at least varietal selection from promising lines provided by RRC and farmer-breeders. More than 400 farmers are doing crop breeding in more than 100 villages in 7 provinces of the country. Just as importantly, farmers repeatedly mention the sense of pride and self-confidence that they have regained after being freed from years of dependency on external sources of seed.

- Other national level instruments that are linked to the measure/practice

National Seed Policy

- Are you aware of any other international agreements or programs that are relevant for this measure/practice?
 - a) Convention on Biological Diversity
 - b) Nagoya Protocol
- Other issues you wish to address, that have not yet been covered, to describe the measure/practice

Lessons learned

- Describe lessons learned which may be relevant for others who wish to do the same or similar measures/practices (max 250 words).

Few farmers are interested to do breeding. These farmers should be rewarded for their service to the community to sustain their efforts. Some form of incentives should be worked out and included in the government policy.

Our efforts on this bore fruit recently. A farmer variety was granted official release in October 2018—the MP1 (named after Meuang Phiang District in Xayabouly Province). The variety spread widely and gained popularity, thus warranting its official release. Two other farmer varieties are going through the same process to be released at the provincial level. This process of provincial release is new and currently being refined in Laos.

Professional plant breeders engaged in PPB needs incentive too. Plant breeding is said to be a dying profession as the current plant breeders are molecular biologists working in the laboratories and not on plants in the fields. The work with plant breeding institutions requires changes at various levels within the institution. Changes in program and project planning and evaluation procedures and in the criteria used to assess researchers' and extension workers' performances may be needed.

In general, the series of projects and programs on PPB was able to effectively draw the support and cooperation of local government institutions, which contributed greatly to the realization of



the PPB objectives. And the greater the local government support to project activities, the more successful is the project in the communities.

- What challenges encountered along the way (if applicable) (max 200 words)

Developing the capacities of government extension agents to become FFS facilitators was challenging, and the process takes longer, but it pays to work in partnership with them. Having them unlearn old practices and misconceptions was difficult, but once they experienced and saw for themselves how skillful and creative farmers are, extension agents gradually learned how to work with farmers more effectively and in the end, they enjoyed the experience as together with farmers they achieved significant progress that they themselves couldn't accomplish on their own.

The same is true with the partner plant breeding institution. Most plant breeding institutions don't give segregating materials to farmers as they don't believe that farmers can handle such materials. So, it was a struggle with the plant breeders initially, but when the plant breeders involved in the program implementation discovered for themselves that farmers can do breeding even better than some of them, they realized how efficient PPB is in bringing locally adapted varieties in the field and addressing the various needs of farmers across different agro-ecosystems.

- What would you consider conditions for success, if others should seek to carry out such a measure or organize such an activity? (max 100 words)

Raising awareness on the value of PGR diversity and the importance of conserving the traditional varieties and landraces is crucial for this kind of initiative to succeed. Crop breeding takes a long process and both farmers and partner institutions would not commit to this process if there was no understanding of the need to develop the traditional varieties for farmers to conserve them.

If PPB is to be mainstreamed, it needs to be supported by governments. PPB must be institutionalized in the plant breeding program of government partners. Likewise, donors must have a long-term commitment to realize a transformative change.

Further Information

For more information on the practice, you may follow: www.searice.org.ph/cbdc-bucap