Narrative report
ALiSEA Small Grant Facility

THE ORGANISATION

Name of the organization : THE INTENATIONAL COOPERRATION CENTER (ICC)
THAI NGYUYEN UNIVERSITY

Legal status of the organization: Public

Name and details of the contact person : Hoang Van Phu

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Date the organization was established : 2009

Main activity of the organization:

- Reseaching on agriculture and rural development
- Consulting in designing and implementing of R&D projects
- Providing short courses on various fields such as agriculture, rural development, soft skills, languages
- Exchanging students and faculties

THE FUNDED INITIATIVE

Title :***"Adaptive Research on Rice/Potato Rotation Model (applying SRI for rice and minimum tillage method for potato) in Paddy Land of Phu Binh district, Thai Nguyen Province".***

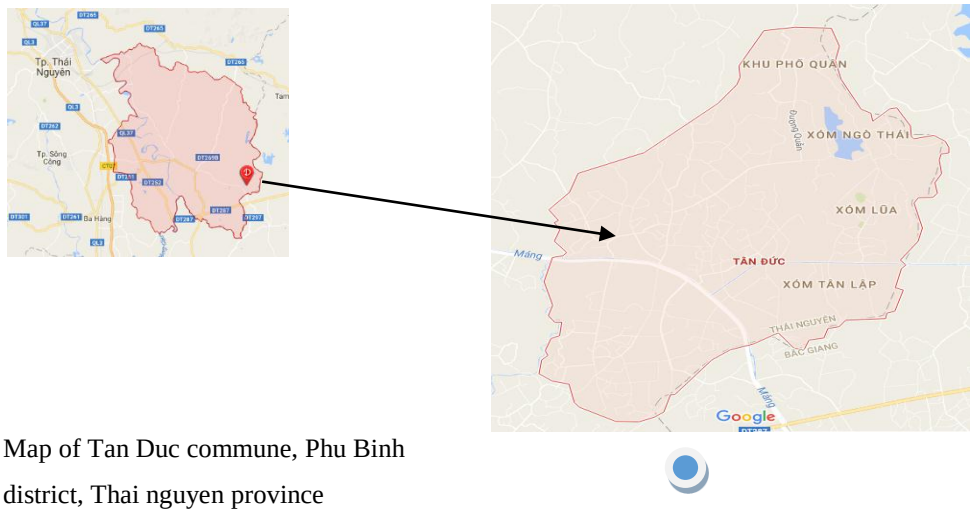
Main Field of involvement: *Testing innovative practices:*

Summary of the initiative

"The System of Rice Intensification (SRI)" and "The Growing Winter Potato by Minimum Tillage Method (GPM)" have been recognized by Vietnamese Government as new advanced techniques since 2007 and 2012 accordingly. Recently, SRI has been applied by about 2 millions of farmers on nearly haft of million hectares and about 5,000 farmers are applying GPM (Dũng, 2016).

Both SRI and GPM urge farmers to farm toward reducing chemical inputs, increasing organics; support lifes of soil; increasing productivity and economic efficiency; and act as facilitators for farmers working in group and support for rural social asset development. SRI and GPM are practiced on paddy land in rotation system. However, SRI and GPM are still practiced separately by farmers, there is no integrated SRI-GPM model in rice-based system as well as lacking proof on its advantages versus the conventional monocultural rice practices. Therefore, we proposal a project with title : ***"Adaptive Research on Rice/Potato Rotation Model (applying SRI for rice and minimum tillage method for potato) in Paddy Land of Phu Binh district, Thai Nguyen Province".***

Project location:



Map of Tan Duc commune, Phu Binh district, Thai nguyen province (project site)

Backgroud of the intervention

The project aims to build an integrated SRI-GPM model and run by group of farmers in on-farm study approach with principles of Farmer's Field School (FFS). A study and holistic analysis of the model will be done by farmers and ICC scientists. Multiple stakeholders such as Practitioners (group of farmers), Technician/Scientist (commune and district extension workers, ICC experts); Business sector (agricultural business enterprises), Managers (mass social organizations, and local governments) are involved. The project will be carried on one year (June, 2017 to May 2018) and in Tan Duc commune, Phu binh district, Thai Nguyen province. The project will test an approach method of "Public-Private Partnership" or "linkage of 4 partners: farmers-technician/scientists-business-public managers" in technological transfer, agroecology transition as well as sustainable rural development in uncertain social and climate changes in Vietnam.

The target beneficiaries of the intervention and target audience

- Small rice farmers in Tan Duc commune, Phu Binh district, Thai Nguyen province
- Food business sector
- Agricultural technical staff in commune, Phu binh district, Thai nguyen province
- Tan Duc commune, Phu Binh district and Thai nguyen provincial policy makers
- ICC staff and students at Thai Nguyen university

What were the main objectives of the funded initiative?

- To build a farmer-led n integrated SRI-GPM model using on-farm study approach with principles of Farmer's Field School (FFS)
- To study and analyse holistic aspects of productivity and economic efficiency; nutrient cycling, rice straw management, micro-organism biodiversity, environmental protection and adaptation with climate change; social asset; roles and linkages of stakeholders in disseminating the model.
- To motivate cooperation and linkages of key stakeholders including farmers, scientist/technician, business sector and local government to create added-values for products of the model which is base of extending and sustainability of this eco-agricultural practices in rice based land.

Approach & methodology applied for implementing the funded initiative

- A model of rotation system of Summer rice crop (Jul-Oct) – Winter potato crop (Nov-Jan) – Spring rice (Feb-Jun) on paddy land (named as SRI-GPM) will be established and run by group of farmers.
- "Bottom-up" approach will be used in the project. Based on farmer's actual condition and with support from ICC experts, the model will be designed, implemented, documented and assessed by group of key farmers (with more women).
- FFS pricinples and approach are used during implementing of the model and farmer's learning.
- On-farm research approach and farmer's participation in study will be used to analysis and assess in holistic aspects of the model with guideline and support of ICC scitentists.
- Open, public dialogue (field worshops and final meeting) among stakeholders (such as group of farmers, women's, asssociation, agricultural businees enterprises, extension, plant protection department, ICC scientists, local governments) to incease their participation and disemination of the model in the year coming.
- Experience and lessons of the model will be documented by ICC experts and key farmers

Main activities implemented

- Building a model of integrated SRI-GPM in 3.2 hetares with participating of group of about 63 rice farmers (with more women farmers).
- Organizing a FFS in rice and potato growing for farmers who involving the model.
- A research with data collection and analizing holistic aspects of the model.
- Three field worshops (one for each crop) in commune to reflect and share experience
- A final workshop to share experience, cooperate among stakeholders and diseminate the model.
- Documentation of the implementation process, results and lessons learnt of the model for disemination

Main benefits of the partnerships of the action

- Group of farmers with more women: were empowered in designing, contributing and implementing (land, seeds, fertilizers, and labor), monitoring, evaluating and benefiting from the model both incresing income and knowledge, then they will have onwnership of the model which support them in transition process of farming to agroecology.
- Technicians and scientists:

  + Staff of Agricultural Extension and Plant Protection Stations in district were involved in implemeting the model that help them to improve technologial knowledge and extension skills in supporting farmers as well as measures of farming practices to prevent pests and diseases.

  + Thru helping and support farmers by FFS and conducting research during the project, ICC specialists and students had learnt more and improved skills of field data collection, data analyse and write scientific report, documentation of experience and learnt lessons.
- Business sector: Que Lam Agricultural Enterprise established cooperation with farmers to use bio-fertilizers in 50 ha in Summer rice and 67 ha in Spring rice crop and buying farmers' added-value rice products (so called organic rice). Thai Nguyen Seed Center cooperated with farmers to produce Bao Thai seeds with SRI practices.
- Government and its organization

  + Commune Government, Women's Union and Farmer's Union: was awareness and understand benefits of agroecology then they put the SRI-GPM in their livelihood programs and environmental protection actvities. The model supported establishment of key farmers groups, agricultural cooperative to advocate, propagandize for transition of agroecology; facilitate linking farmer groups with input and output service providers.

Project has contributed to promoting agroecology transition

- The project promoted farmer's understanding and benefits from applying agroecological practices, then they were motivated to replicate and adopt in their land.
- Famer's point of view changed from monoculture of rice cultivation to diversity through example of rotation and intercropping farming; from short term to long term farming investment; from single to holistic view; expanded from pure-interested economic to include ecological benefit (environment); from

conventional belief in increase of outputs by increasing chemical inputs to smart farming management by growing more with less inputs; from chemical dependance to chemical free…

- Promoting involvement of business sector to add more value and create higher consumer's demand on eco-agricultural products bringing benefit to eco-agricultural farmers.
- The real involving of multiple stakeholders in the project contributed to good transition of agroecology in Phu Binh district, Thai Nguyen province.

Communication & dissemination activities and events that have been organized

- There were 3 FFSs organized in 3 crops (2 rice crops and one potato crop) with more than 60 farmers participated.
- Organized three field workshops and one summary conference to share results achieved through each crop and whole cropping system with particpating of more than 60 people who are SRI-GPM and non SRI-GPM farmers, technical officers, leaders in commune, district, province levels, 3 food business companies, staff and students at Thai Nguyen univeristy, and local media.
- Through the annual conference of summarising and developing the agricultural development plan of the locality to share the results of the model and build the plan to expand for next crops.
- The field workshops, and the model summary conference invited the local media to attend and broadcast to propagate this model.
- The model served as an internship site for 3 students of Thai Nguyen University to do research on model, enhancing the awareness and action of environmental protection of people. Through their research reports, the results of the model were shared with many students and faculty members in the university.
- The results of the study were shared at conferences of SRI-Viet Network in Vietnam and in the world.

Lessons learnt from the project

In technical

- The transition from traditional monocultural agriculture to ecological agriculture should be based on the farmer's curent agricultural system to ensure stability (applying rice growing model and adding winter potato crops).
- Choose different crops from rice so that they can support each other in soil improvement, reduction on pests and diseases, and its requirement of time cultivation on the land not compete time with rice.
- It is difficult to change people's perceptions and farming habits, so it is necessary to select simple techniques to help people get acquainted with and change more easily.
- In the beginning of transition to agroecology, it must bring about economic benefits, then mentioning the social and environmental issues.
- When choosing intervention, the system must ensure food security and have products to increase income for people to attract them to participate.

In organizing production and project management

- The beginning farmers did not completely believe in the model; therefore, they applied it from small to large scale to make sure they would get positive effects.
- Farmers should be discussed and chose their own technology, solutions; therefore they had more responsibility, and could own the model as well as participate in assessment to understand more deeply

in the field. Through the FFS classes, farmers were empowered to recognize their reality and practical ability.

- In a group of farmers with different perception, it is important to work with some key farmers to persuade them to communicate with other farmers. Small farmer groups should be used in general activities such as collective activities such as making seedlings, potato planting in group so that they can share and learn from each other.
- In order to change people's perceptions and practices of ecological agriculture, it is neccessary to use indigenous knowledge related to production experiences that people have acquired.
- When implementing ecological agriculture, it must cooperate closely with local authorities to persuade enterprises to participate in and commit together.
- Persuading local authorities to transfer from traditional agriculture to ecological agriculture is included in the annual local agricultural development plan.
- Organize the dissemination workshop has to include all stakeholders to discuss, evaluate and propose actions for the next time.

Main outputs of the projects

- The model of SRI-GMP has been established by farmers and maintained for the following years. It is the first step of the transition from traditional monocultual rice cultivation to SRI rice cultivation and growing potato in winter; bringing about economic, environmental and social benefits. Model implementation helps increase income, effectiveness of land use, capital and labor use. Besides, it helps protect the environment by transferring straw from burning to mulching and compost for fertilizer, reducing chemical fertilizers and pesticides. On the social side, it helps to set up group activities, empower women; change people's perceptions and practices from rice monoculture and changes from depending on chemical inputs to cultivation based on ecological agriculture, improving the understanding of the ecological sciences of plants, increasing understandings and awareness as well as actions on environmental protection, produce commodity products to connect with business sector. At the same time, the implementation of the model based on FFS classes changes the way to transfer scientific and technical advances, also creating effective methods to support professional agencies more effectively.
- A technical package of SRI-GPM was developed to help farmers to apply and help technical and extension officers in expanding the model to other area in district and province. It will be a reference for others who intend to change conventional practice to ecological farming.
- Scientific report: A summary of research methodology with the participation of farmers in the transition from traditional agriculture to ecological agriculture together with the results obtained were deeply analyzed on 3 aspects. economics, environment and society. At the same time, the lessons learned have been documented to disseminate. This report is shared with professional agencies, citizens and government, also used as reference materials for science activists and students.
- Establishment of a local agricultural cooperative in Tan Duc commune namely "Agricultural Cooperative No.1" on the basis of the FFS classes and other stakeholder groups to maintain and develop other agricultural activities toward agroecology in the near future.

- Create a connection and cooperation between enterprises, farmers, and local government by cooperation agreements with companies such as Que Lam Group, Thai Nguyen Seed Center, Tan Nong Phat Company.
- The SRI-GMP model production process was provided to professional agencies (extension and plant protection) for training and extension of the model in the district and province.
- Suggestions/recomandation to local authorities (commune, district, and province) to make effective support policies t help farmers in transition of their conventional agricultural practices to agroecology approach.