



AGREEMENT ON KOLFACI TECHNICAL COOPERATION PROJECT (TCP) FOR
"Economic and technical validation and technology transfer to increase water use efficiency in 02 rice sowing systems in Peru"

Project Title : Economic and technique validation and technology transfer to increase water use efficiency in 02 rice sowing systems in Peru

I. Principal executing Agency

- **Name of Organization** : INIA (National Institute of Agrarian Innovation)
- **Name of Head** : Alberto Dante Maurer Fossa, Ph. D.
- **Address** : 1981 La Molina Avenue - La Molina, Lima, Perú
- **Phone** : (51-1)349-2600
- **Fax** :
- **Email** : jefatura@inia.gob.pe
- **Principal Investigator** : Orlando Palacios¹
: Fernando Montero Bances²
: Edson Torres Chávez²
- **Organization Name** : "El Porvenir" Agrarian Experimental Station
- **Position/Profession** : Researcher and Chief of the National Program of Agrarian Innovation of Rice/Agronomy Engineer¹
: Researcher of the National Innovation Program of Rice
: INIA/Agronomy Engineer²
- **Address** : 1015 Martínez de Compañón Street, Tarapoto.
- **Telephone Number** : 0050-42-5222-291
- **Fax** : 0050-042-5222-291
- **Email** : opalacios@inia.gob.pe, opalacios1@hotmail.com
femoban@hotmail.com

II. Project Start/End Date : February 2 015 - December 2 017

III. Project Description

3.1. Introduction

Water is essential for the development of agriculture and consequently is necessary to use this resource efficiently. The low efficiency of water use in rice monoculture in Peru, which is becoming increasingly scarce, limits availability of water resources for the cultivation of other products and contributes to soil degradation, reducing the possibility of a change in the Crop planning sheet.

Therefore, it is necessary to develop technologies to increase the efficiency of irrigation water use for rice cropping areas and help to create the necessary conditions for significant part of the areas as monoculture on the coast can be devoted to more efficient production systems. Reducing only one irrigation (1,152 m³) in rice, decreases water consumption on the northern coast in about 150 million m³, which in turn would allow planting 33,000 hectares of beans, 20,500 of corn or 21,000 Ha of cotton.



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3.2. Project Summary

This project purposes to make the Technical - Economic Validation of new management technologies to increase water use efficiency of 2 planting systems of rice cultivation in Peru. Thus, it will select the best treatment technologies (volume = 8.000 to 10.000 m³ and irrigation frequency = every 8 to 14 days) identified by the - INIA National Agrarian Innovation Program of Rice through research trials in 2008 (Annual Report PNIA Rice - INIA 2009).

The first group of rice varieties which will be used include four local varieties and two promising lines of INIA Rice Program, selected to present Semi - Early Vegetative Cycle, High Yield of Grain and Good Quality Milling. These will be evaluated in two planting systems (Zero Tillage and Seeding at transplant), and in some of the major rice valleys of Peru.

Water consumption of each technology under evaluation will be determined by using a current meter. In this method, water velocity is measured by a current meter which measures the speed (v) at a given point the mass of water, which is then multiplied by the area of the cross section (A) to estimate the flow rate (Q).

The Technical - Economic Validation studies of the best technology to increase the efficiency of water use in rice cultivation, and the official release of the technology in 02 rice-growing areas Peru are planned to be finished in the first two years of this project. In the third year, the transfer of such technology to the Boards of Irrigation Users will be performed through demonstration plots, technical lectures, guided tours, field days, leaflets, triptics, etc.

3.3. Goals

- Higher efficiency of water use in rice cultivation, which will allow reduction of production costs, lower cost of water consumed and reduce the use of agrochemicals.
- Availability of larger volumes of water to be used by producers of other crops.
- On the coast region, the process of soil salinization will be lessened in sectors nearby rice cultivation areas, due to a significant reduction in water consumption.
- Higher vector control of malaria (*Anopheles albimanus*), by effect of intermittent dry periods in cropping.

3.4. Project Justificación

The current watering module of 14 ML/Há or more depending on the valley, is based on studies conducted over 20 years ago with varieties of greater growth cycle (Racchumi, 1984). Updating this information would reduce irrigation module. Water consumption per hectare of irrigated rice has been gradually decreasing over the last 30 years, thanks to the planting of modern varieties of increasingly shorter cycle.



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There is still the potential to reduce further water consumption without sacrificing productivity through further reduction of the cultivation cycle and through changes of the prevailing system of sowing and transplanting. Rice varieties with shorter vegetative cycle facilitate the adoption of crop rotation systems that use the remnant moisture from rice cultivation, and help to reverse the process of soils degradation, increasing annual incomes of producers, and expanding alternatives available to rotations or changing the crop irrigation-scheduling card.

There exist several treatments identified by the National Program of Innovation in Rice- INIA that increase water use efficiency in rice-based systems of production. In addition, there are 4 local varieties and 2 promising lines available which were developed by the Rice Program INIA with semi-early vegetative cycle, high yield potential, pest tolerance and good milling quality. So, there is a need to evaluate the whole package to improve water use efficiency for this crop to avoid the problems of soil salinization and at the same time to use the water surplus for other crops .

IV. Project Objectives

4.1. Main Objective

Increase the efficiency of irrigation water in rice-based systems in Peru through new water management technologies and the use of semi - early vegetative cycle varieties

4.2. Specific Objectives

- On the coast decrease the processes of soil salinization near rice areas.
- Decrease the cost of production of rice following lower water consumption.
- Achieve greater availability of water for other crops.

4.3. Outcomes

- At the end of the second year the project should produce 1 Technical Report, at least two brochures and one scientific article of the new management technology.
- At project completion (third year) there should be available reports of the official release events, field days and technical presentations as well as newspaper, television and radio notes.

4.4. Project Activities

Collection and evaluation of Information:

Collection and evaluation of information on the development of technologies to increase water use efficiency in production systems based on rice in Peru. Protocols for technical - economic validation of technologies will be developed based on this information.

Technical and economic validation of technologies



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The validation of technologies will be conducted in two major rice valleys of Peru (Tumbes and San Martín). Four trials will be installed in farmers' fields for two consecutive seasons. The products of the validation process will be a technical report, a brochure and one scientific article.

Official release of the technology

The official release of the technology will be held in the second year into the project, for which demonstration plots will be installed in farmer's field, and will be held in 02 official events.

Technology Transfer

The transfer of technology will take place at the end of the third year through modular courses, demonstration plots, technical talks, and guided visits to the experimental plots, field days, triptics, and brochures.

V. Results/ Deliverable products

- At the end of the second year the project will have produced one Technical Report, at least two brochures and one scientific article on the new management technology.
- At project completion (third year) there will be available reports of the official release events, field day and technical talks; as well as newspaper, television and radio notes.

VI. Beneficiaries

- Small producers in the Peruvian coast and jungle regions will be the main beneficiaries, because a new management technology will be at their disposal. That will allow them greater crop profitability due to the lower cost of water use and reducing the use of agrochemicals; likewise with the volume of water saved other producers can increase production areas of rice or other crops.
- Likewise, information obtained will serve as a source for national and international rice and students of universities and institutes related to agriculture in our country, to formulate new research works.



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VII. Project Duration /Milestones / Timelines

Activities	feb-15				ene-16				ene-17		
	dic-15				dic-16				dic-17		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1. Collection and evaluation of information											
Collection and evaluation of information on the development of technologies to increase the efficiency of water use in production systems based on rice in Peru I Peru	XXX	XXX									
2. Technical and economic validation of technologies											
Trials of technical and economic validation		XX	XXX	XXX	XXX						
Official release of the new technology						XXX	XXX	XXX			
3. Transfer of Technology											
Transfer of technology through demonstrative plots, field days, technicals talks, etc.									XXX	XXX	XXX
4. Building capacities											
Training of professional and technicians personnel		X			X						
Adquisition of Materials and Equipment		XXX									
Official release of the new technology											
Formulation of the subproject	XXX										
Elaboration of base line.	XXX										
Elaboration of output line											
Publication of articles in specialized journals/ subject to publication in refereed journals indexed.									XXX		
Preparation and presentation of Financial Technical Report (FTR)											

VIII. Experience and Qualifications

The National Institute of Agrarian Innovation (INIA) is under the Ministry of Agriculture and Irrigation of Peru. It is responsible for designing and implementing the National Strategy for Agricultural Innovation. As the lead Agency of the National Agricultural Innovation System (NARS) INIA is the technical regulatory authority on seeds, biosafety, national record of Peruvian native potato, domestic camelids, etc. INIA has performed agricultural research works for over 30 years and it is the creator of 90 % of the rice technology applied in the country including varieties and crop management techniques and has developed an institutional capacity and skilled human resources, infrastructure and equipment that will meet the expectations of the project.

The National Program for Agricultural Innovation in Rice at INIA has generated technologies with great acceptance by farmers, such as varieties: Capirona (Year release:



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1996), INIA 507 - Conquest (Year release: 2007), INIA 509 - La Esperanza (Year release: 2010), and this year has officially released the variety INIA 511 - La Victoria.

IX. Partners:

INIA has signed a Strategic Research Alliance with the International Center for Tropical Agriculture in Colombia, and national interagency collaborations: Special Project Alto Mayo Regional Government of San Martin - Peru and Boards of Irrigation Water Users; which guarantees the success of the project'. Also will be invite to participate institutions as the National University of San Martin - Tarapoto and the National Agrarian University - La Molina.

X. Project Budget

From February 2015 – December 2017

Table 2: Total and Annual Project Budget (USA \$)

February 2015 – December 2017

Description	Period (Years 2015 -2017)		
	Año 1	Año 2	Año 3
VARIOUS SERVICES	17500,00	17500,00	20000,00
EQUIPMENT	3500,00		
MATERIALS AND SUPPLIES <i>Establishment & operation of the research work and technology transfer</i>	2500,00	3500,00	4000,00
TICKETS AND TRAVEL EXPENSES <i>(National and Local travels)</i>	4000,00	5000,00	5000,00
MANAGEMENT EXPENSES <i>(Project Formulation, elaboration of date base line and output line)</i>	2500,00		
PUBLICATION <i>Scientific Articles</i>		3000,00	
ANOTHER EXPENSES ELEGIBLES		1000,00	1000,00
Sub total (\$) USA	30 000,00	30 000,00	30 000,00
Total (\$) USA			90 000,00

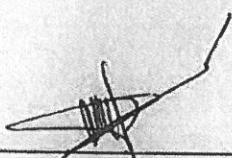


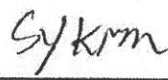
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DATE AND SIGNATURE OF THE RESPONSIBLE INDIVIDUALS:

For the Peru (Member Country)

For the Republic of Korea


(Signature) Date: February 25, 2015
ORLANDO PALACIOS AGURTO
Investigador Principal
INIA


(Signature)

Date

NAME
POSITION
RDA

Sang Yool Kim

