



Building Resilience for Coastal Communities in the Coral Triangle: Climate-Smart Rice Improves Food Security in the Philippines



(Left) Dr. Glenn Gregorio, a geneticist from IRRI, shows the newly-developed climate-smart rice varieties during the Farmer's Day in Los Banos, Laguna in October 2014 (Center, top) Harvest of salt-tolerant rice; (Center, bottom and right) Seed growers in Taytay, Palawan examine the grain quality of climate-smart rice in the field of the farmer cooperator during the Farmer's Day.

PROJECT OBJECTIVES AND SCOPE

“Strengthening Coastal and Marine Resources Management in the Coral Triangle: Southeast Asia” aims to promote the long-term conservation and sustainable management of coastal and marine resources in the Sulu-Sulawesi Marine Ecoregion (SSME), by strengthening integrated and ecosystem-based resources management.

Relevant Project Outcome: Coastal communities successfully implement climate change adaptation (CCA) measures to increase resilience at village level.

Relevant Project Outputs:

- Vulnerability assessments identify priority CCA demonstration projects conducted at local levels to increase resilience of coastal and marine resources
- Public-private partnerships established to implement sub-projects

GEF TOTAL PROJECT FINANCING

US\$11.42 million

PROJECT BLOG: <https://ctisoutheastasia.wordpress.com>



Deputy Team Leader for the Philippines Raul Roldan (left) turns over two salt-tolerant rice varieties to Taytay's Municipal Agriculturist Gaspar Pasionela (right) in 2013.

MAIN PROBLEM ADDRESSED

Climate change impacts have reduced rice production in the coastal municipality of Taytay, Palawan in the Philippines (population: 70,837) from 3.5 tons per hectare per harvest during good weather conditions – to around 1.5 to 2 tons per hectare in drought conditions.

Reduced harvest threatens Taytay’s 2,500 rice farmers –who also rely on aquatic resources such as mangroves and the fishing grounds for their livelihood – and contributes to continued degradation of natural resources

PRIMARY GEF-SUPPORTED INTERVENTION UNDER THIS SUBPROJECT ACTIVITY

Based on a local level vulnerability assessment and CCA plan, the ADB/GEF project team worked with communities to undertake a set of integrated pilot demonstration CCA activities in Taytay, Palawan. This included:

1. Introduction of salt-tolerant rice varieties from the International Rice Research Institute (IRRI) to bring back the productivity of idled paddies due to saltwater intrusion during high tide and storm surges;
2. Mangrove reforestation in 25 hectare;
3. Planting of ipil-ipil trees in a donated 3-hectare land area to make available alternative sources of fuel wood;
4. Mariculture of abalone with juveniles from the Southeast Asian Fisheries Development Center Aquaculture Department and provision of materials for seaweed culture as alternative livelihood for mangrove cutters;
5. Training on early warning system and disaster preparedness for coastal barangays; and
6. Health and sanitation training and monitoring.

Among the interventions mentioned, one focused on the **introduction of climate-smart rice varieties aimed to help communities adapt to climate change impacts**. The ADB/GEF project started with salt-tolerant rice varieties in paddies where there is brackishwater intrusion. Introduction of drought-resistant rice varieties followed, based on initial results, at the request of local communities.

[This poster highlights project activities related to introduction of salt-tolerant rice.]



The ADB/GEF project partnered with the local government from the start of the CCA subproject to ensure participation and sustainability.

MAIN PARTNERS FOR THIS SUBPROJECT

IRRI, Local Government Units of Taytay and Kumalarang, Taytay Municipal Farmer’s Association

PRIMARY BENEFICIARIES

2,500 rice farming and fishing households in the coastal municipalities of Taytay, Palawan

Table 1. Rice fields in Taytay, Palawan affected with physical impacts of climate change

	Hectares	Percentage
Total hectares of agricultural lands	9,000	
Total hectares of rice fields affected with climate change	5,800	64.4%
Total hectares of rice fields affected with flood	500-700	8.6 – 12.1%
Total hectares of rice fields affected with saltwater intrusion (unproductive)	800-1,000	13.8 – 17.2%
Total hectares of rice fields affected with drought	3,000	51.7%

Table 2. Rice fields in Taytay, Palawan affected with physical impacts of climate change

Project Interventions	Hectares
Introduction of climate-smart rice varieties	About 50 hectares were planted with different varieties
Introduction of IRRI 155 o NSIC Rc 23 (Katihan 1)	Pilot testing of 15 kilos of drought-prone seeds (1.5 hectares)
Planting of salt-tolerant rice varieties: <ul style="list-style-type: none">• PR28378-AC96-36 2011 NSIC Rc 296 (Salinas 9);• IRRI 171 o NSIC Rc 334 (Salinas 15)• IRRI 172 o NSIC Rc 336 (Salinas 16)	Estimated 40 hectares of rice fields were planted with saline varieties and this number has increased.
Planting of other pilot saline rice varieties for seed distribution or Green super rice (GSR) <ul style="list-style-type: none">• NSIC 2014 Rc 390 or Salinas 19 (IR83140-B-28-B)• NSIC 2014 Rc 392 or Salinas 20 (IR84675-58-4-1-B-B)	Seed distribution is planned this coming planting season
Pilot testing 2 kilos of IR 64 Sub 1	Seed distribution is planned this coming planting season



During the Farmer’s Day, majority of the 52 rice and seed growers from 16 barangays in Taytay chose the Katihan variety for testing as many areas in Taytay were more affected by drought than salt-intrusion.

LESSONS LEARNED

1. GET GOVERNMENT BUY-IN

The local government unit was supportive to experiment with agricultural innovations.

2. BUILD ON THE GAINS FROM PREVIOUS WORKS

The ADB/GEF project helped implement a CCA plan prepared jointly by the local government, the community and WWF–Philippines.

3. FORGE STRONG LINKAGES WITH RESEARCH INSTITUTIONS

Local and international research and academic institutions shared useful technical advice and inputs.



The farmer-cooperator reviews records of the different varieties with IRRI staff during their field visit.

4. FIND AND NURTURE CHAMPIONS

The ADB/GEF project worked with farmers who are forward thinking, innovative, and have a spirit for social entrepreneurship – they were prepared to walk the extra mile to make the project succeed.

5. SHARE KNOWLEDGE WIDELY

The ADB/GEF project encouraged stakeholders to document their learnings and plan how to share their knowledge. Local events, such as Farmer’s Day and festivals provide opportunity to to broadcast results and get feedback. Stories documenting progress were prepared and share widely with partners through local, national and social media.



Articles about the project were submitted to ADB’s website for wide dissemination.



Events like the Farmer’s Day enable results to be shared to partners and stakeholders, such as these curious seed growers.

6. MONITOR CLOSELY AND REGULARLY

Results from field testing were reported regularly to the local government, research and academic institutions and other stakeholders. Farmer-cooperator showed good skills in record-keeping and were able to provide qualitative and quantitative information.



The Municipal Agriculturist of Kumalarang, Zamboanga del Sur (right) decided to give an owner of an idle brackishwater fishpond (left) the salt-tolerant rice for testing which resulted in a good harvest in the first trial. The fishpond had become idle because of disease infestations, which caused chronic mortalities of his shrimp stock. There are other fishponds in the municipality that are experiencing disease outbreaks so this could be a good option to make these areas productive.

CONTRIBUTION TO SCALABILITY AND LONG-TERM IMPACT

The ADB/GEF project ‘farmer cooperator’ has expanded and replicated the planting of climate-smart rice varieties to seed growers in the municipality:

- 52 rice and seed growers from 16 barangays in the municipality of Taytay, Palawan joined the Farmers’ Day on 10 December 2015. The farmer cooperatore distributed 60 kg of seeds and encouraged other rice growers to test them in their areas;
- Two other municipalities – Dinas and Kumalarang in Zamboanga del Sur – are testing various climate resilient rice varieties.

The IRRI, a CGIAR Research Centre, is supporting a large scale program on climate-change ready rice – which has salt, heat, drought, submergence tolerance properties as well as rice for poor soils.

- The ADB/GEF project created an opportunity for initial “proof of concept” for salt-tolerant variety of rice in a number of different circumstances. Following successful results and documentation, more systematic on-farm trials can be scaled up to other coastal communities in the Coral Triangle region.

These types of resilience-building initiatives help improve productivity and incomes of households in coastal communities, and contribute to improving management of natural resources irrigation.

CONTACT

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