Income for Coastal Communities for Mangrove Protection
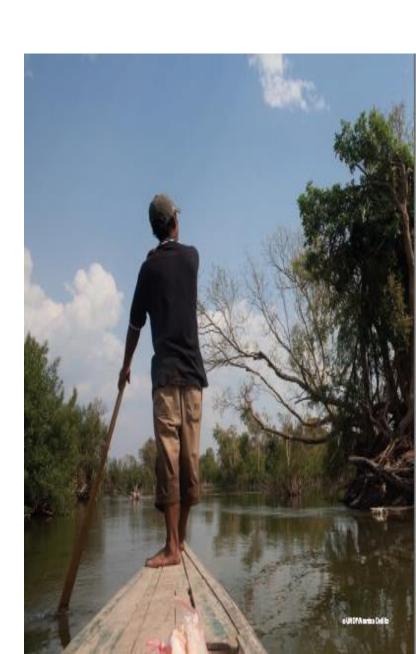
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AGRICULTURE AND RURAL DEVELOPMENT

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The proposed for Policies and Measures (PAM) for integrating REDD+

REDD+ mainstreaming solutions	Expected PAM
Restoration of mangrove ecosystems in aquaculture area to reach the target of in the forestland use planning to 2020 (plantation of 29,500 ha mangroves and protect 168,688 ha)	- Review the current status of deforestation and degradation of the mangrove forests by aquaculture activities in the coastal areas
	- Reviewing the current policy/planning frameworks at provincial level in key coastal provinces in MRD in order to integrate REDD[+] measures into aquaculture production appropriately
	- Planting scattered mangrove forest trees in aquaculture lands along the coastal aquaculture production areas

The proposed for Policies and Measures (PAM) for integrating REDD+

REDD+ mainstreaming solutions	Expected PAM
Research, development and transfer models of Bio shrimp-mangrove forest, improved extensively, shrimp-crab-shells, snails-mangrove, adaptation models of ecology base on aquatic (EbA) to diversify livelihoods from fisheries products for forest dependents	- Assess costs and benefits, the status of ecology and development of the potential models for scaling promising models
	- Pilot REDD+ integrated models
	- Evaluate the results and propose solutions to replicate the model
	- Develop and scale up livelihood activities (aquaculture, apiculture and eco-tourism etc.) integrated in mangrove forests as proposed in the approved restructuring forestry subsector.

The proposed for Policies and Measures (PAM) for integrating REDD+

REDD+ mainstreaming solutions	Expected PAM
Strengthening the coordinate capacity between sectors to implement REDD + aquaculture production in coastal provinces	- Establish profile of sustainable mangrove forest management and development in combination with bio-aquaculture raising
	- Support to farmers and businesses/enterprises in scaling-up bio-aquaculture models, sustainable aquaculture certification (ASC, MSC CoC) to reach at least 60% get ASC by 2020.
	- Strengthen the linkages between businesses-farmers in combination with mangrove forest development and protection embedded the corporative social responsibility (CSR) of the producers to mangrove forest and environmental protection; marketing bio/safety aquaculture products.

The proposed for Policies and Measures (PAM) for integrating REDD+

REDD+ mainstreaming solutions	Expected PAM
Develop sustainable integrated farming and ecological shrimp farming system in The east coastal provinces	- Compile technical guidelines for forest protection and management of core mangrove forest with aquaculture
	- Establish management and protection models combined with culture snails, clams…
Research and improve the aquaculture and breeding technologies to select marine species that can resist/well adopt to mangrove forest living conditions	- Assess the status of technology application farming, cultured species.
	- Research and development of new cultured species suitable for ecological and climate conditions of the mangrove forests.
	- Implement pilot new combined of mixed aquaculture species with mangrove forests.

The proposed for Policies and Measures (PAM) for integrating REDD+

REDD+ integrated solutions	Expected PAM
Building capacity, raising awareness on REDD + for the stakeholders involved in the aquaculture value chain, especially in the coastal provinces	- Developing capacity building and communication plans, policy dialogues, raising awareness on REDD + in sustainable aquaculture value chain development
	- Developing plan and implementing the awareness raising campaign to aquaculture producers, cooperatives and enterprises on benefits of the REDD+ integrated in aquaculture production measures
	- Developing and implementing a technical training plan for technical staff and human resource to help aquaculture farmers, enterprises in applying LC technology, efficient uses of NR in coastal areas.
	- Organizing conferences, workshops, field studies on successful PAMs as a part of REDD+ program.

Fishery-mangroves

- Conserve mangroves and farming fisheries for livelihood:
- Mangroves - shrimp;
- Mangroves - shell fish;
- Mangroves - crabs;
- Mangroves - fish;
- Mangroves - snail (*cerithidea obtusa*)

Income from aquaculture in in mangrove forest in Ngoc Hien

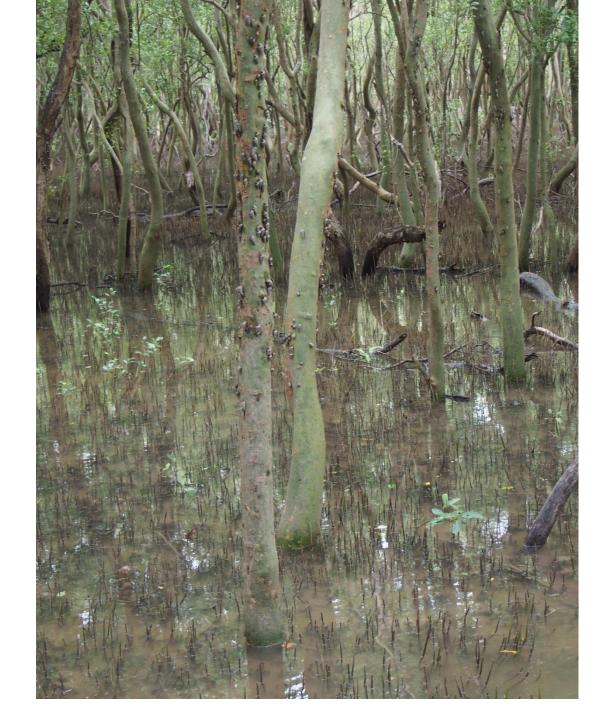| No	Kind of aquacultures	Average production (kg/year)	Average price (VND/kg)	Average income (VND/year)	Average income of mangrove forest (VND/ha/year)
1	Cai Duoi Vam	4,069		198,895,412	14,917,156
-	Shrimp	550	60,000	32,989,412	2,474,206
-	Fish	551	60,000	33,068,000	2,480,100
-	Swamp ceriths	1,273	30,000	38,200,000	2,865,000
-	Squid	493	60,000	29,600,000	2,220,000
-	Clam	401	8,000	3,208,000	240,000
-	Acetes	495	14,000	6,930,000	519,750
-	Crab	305	180,000	54,900,000	4,117,500
2	Tan An	2,023		86,034,000	6,452,550
-	Shrimp	355	60,000	21,300,000	1,597,500
-	Fish	280	60,000	16,800,000	1,260,000
-	Swamp ceriths	489	30,000	14,664,000	1,099,000
-	Squid	42	60,000	7,560,000	576,000
-	Clam (Vộp)	857	30,000	25,710,000	1,928,250
3	Nguyen Viet Khai	1,700		51,000,000	3,825,000
-	Swamp ceriths	1,700	30,000	51,000,000	3,825,000
	Total	7,791		335,929,412	25,194,706

Income from the mangrove forest protection in Ngoc Hien district

Wood from protection forest	Volume (ster/ year)	Price (1.000 VND/ ster)	Revernue (1.000 VND/year)	Average/ha/ year (.000 NVD)
Average	10,8	540	5,832	440
Min	6,4	540	3,456	260
Max	18,0	540	9,720	740
StD	3,5	0	1,908	-

Source: Vu Tuan Phuong. (2012)

Mud creeper in mangrove forest

Aquaculture and mangrove forests intercropped on shallow strips

Shrimps and mangrove forests planted on the banks

Aquaculture (shrimps, crabs and, fish mangrove forests

ECOLOGICAL SHRIMP-MANGROVE FOREST

The ecological shrimp-mangrove forest system in coastal provinces to increase sustainably farmers' income, protect environment, biodiversity and reducing GHG emission:
- Organic farming products can fetch premium prices for high food safety standards
- More than 180,000 ha have been practiced
- Protect and maintain environmental resources ecosystems;
- Reduce GHG emission, adapt to climate change and ensure sustainable livelihood for coastal communities.

(VIFEP- Green Growth Workshop by VFD, IPSARD 2015)

Direct value: farmers' income 33,9 mil vnd/ha/year (~US$ 1,600)

Indirect income: Coastal protection value about 18.1 million/ha/year; value of carbon storage and sequestration at 4.3 million/ha/year (VAFS, 2012).

Coping with degradation of coastal forest and land slides/erosion