

## WHAT WE DID

We initiated a process across 2 agro-industrial sectors in 4 countries, establishing trust-based relationships with company owners who opened their doors and collaborated in measuring the variables allowing to define the RECP performance of their activity and the roadmap to improve it.

### RECP opportunities in the Rice and Coffee sectors

1 RECP assessment toolkit has allowed training 12 experts in the 4 countries, resulting in :

- **28 CP audit reports** including action plans approved by the companies
- **2 sector assessment reports** to detect the main challenges and opportunities at company and country levels

### Technologies for the valorization of wastes and co-products

Identification and assessment of 25 proven and mature technologies. 5 technologies stand out in terms of social, environmental and economic impact, as well as for their economic and technical feasibility in the given contexts.

- **1 multi-criteria evaluation study**
- **2 technical guidance documents**

## SHORT TERM RESULTS

We obtained short term results by developing concrete business cases in a continuous collaboration with the most motivated companies (60 % of total). The short and medium term modernization program implementation has achieved higher product quality and thus increased revenues.

### 50 different RECP measures were identified with a high potential for direct implementation and impact generation classified as follow:

- Strong focus on **immediately effective cost-savings** by implementing energy management systems with almost no investment (low hanging fruits): Good housekeeping and improved maintenance for better electric system control and systematic consumption monitoring resulting in 5 to 10% of reduced electricity consumption.
- Combination with **investments in product quality increase and modernization programs** (equipment modification), e.g. installation of high efficiency motors for increasing energy efficiency, quality sorters.

### 20 companies have prioritized and implemented the recommended measures, resulting in:

#### Immediately effective cost-savings measures

- 275 tons of CO<sub>2</sub> avoided per year
- 980 tons of processing waste valorized per year
- 8'600 USD in investments only !
- More than 900'000 kWh of electricity per year saved as a consequence of housekeeping measures with low investment
- corresponding to 63'588 USD in savings per year (mostly Vietnam)

#### Investments in product quality increase and modernization

- 398 tons of CO<sub>2</sub> avoided per year
- 101 tons of processing waste valorized per year
- 5'855'000 USD in investments

## MID TERM RESULTS

We identified and initiated advanced CP projects as an immediate extension from CP interventions with a high impact on further valorizing bio-waste and reducing CO<sub>2</sub> emissions as well as allowing the companies to continuously increase product quality and thus achieving higher market prices.

### 13 pilot projects have developed into concrete options for which the companies showed high interest and also willingness to invest:

#### Rice husk valorization:

- 3 projects for improved on site rice husk combustion for paddy drying combined with rice husk briquette production as a coal substituting combustion material for industrial processes in Vietnam and Cambodia.
- 1 small scale rice husk briquetting to substitute non renewable wood in Peru
- 2 projects on rice husk co-processing in cement production in Colombia
- 1 large scaling-up project duplicating the combined approach of EE, improved paddy drying, quality improvement and rice briquette production in 13 rice mills in South Vietnam.
- 1 industrial symbiosis project for combining Pangasius fish farming and rice husk electrification in South Vietnam

#### Coffee pulp and hard shell valorization:

- 2 projects for optimized composting in Peru
- 1 project on pulp (and hard shell) energy conversion using pyrolysis technology in Peru
- 2 projects for improved centralized/decentralized post harvest treatment (cherry drying with quality improvement) in Vietnam

### The potential impact of those pilots can be summarized as follows:

#### 9 projects are in the process of implementation and will generate the following impact:

- 150'000 tons of CO<sub>2</sub> avoided per year
- 120 000 tons of processing waste valorized
- 4'050'000 USD in investments foreseen
- Continuous increase of product quality, in particular for the rice sector (e.g. 5-10% of less broken rice due to improved drying)

#### Important result of the ongoing CP-implementation process:

**4 projects** require an intermediate support to start implementation, since they have been proposed and initiated by the companies towards the end of the CP implementation:

- **1 Scaling-up project for the rice sector with Vinafood 2 in Vietnam:** 7'000'000 USD in investments, 250'000 tons of waste valorized, 120 000 tons of CO<sub>2</sub> avoided per year foreseen
- **2 coffee post harvest treatment centers:** 500'000 USD in investments, 6'000 tons of processing waste valorized foreseen
- **1 combined Pangasius fish farm and rice husk electrification:** 4'000'000 USD in investments, 12'300 tons of waste valorized, 8'150 tons of CO<sub>2</sub> avoided per year foreseen