

PPP for Aquaculture: smallholders, feed innovations, environmental impacts

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April 2018

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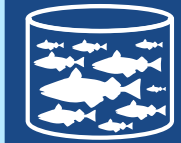
WorldFish Research Programs

Sustainable aquaculture



Enable sustainable increases in livelihoods from aquaculture production without creating adverse socio economic or environmental impacts.

Resilient small-scale fisheries

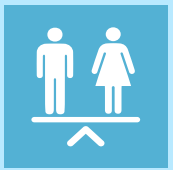
Secure and enhance the contribution of small-scale fisheries to poverty reduction and food security in priority geographies.

Value chains and nutrition

Increase the availability, access and consumption of nutrient-rich, safe fish, especially for women of reproductive age, infants and young children.

Cross cutting themes

Climate Change



Gender Equity

Entrepreneurship

Why Smallholder Aquaculture?

Aquaculture

- Half of all fish consumed comes from aquaculture (FAO 2016), the fastest-growing agri-food sector in the world.
- Sustainable aquaculture growth is key to meeting the world's demand for fish
- Provides many opportunities for employment and income across the developing world

Smallholders

- Largest number of farmers globally
- Often missed by improvement programs and financing/investment
- Key role for livelihoods, food and nutrition security
- Specific challenges:
  - organizations and services
  - improving farm productivity
  - access to working capital
  - accessing markets
  - infrastructure investment

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The Story of the Aceh Aquaculture Cooperative (AAC)

- To be a sustainable and environmentally-friendly aquaculture business, market-oriented in accordance with cooperative and equitable economy principles.
- Legally established in 2013
- Initially 32 members; now over 600 members
- 2017 loan of ~IDR 2 billion

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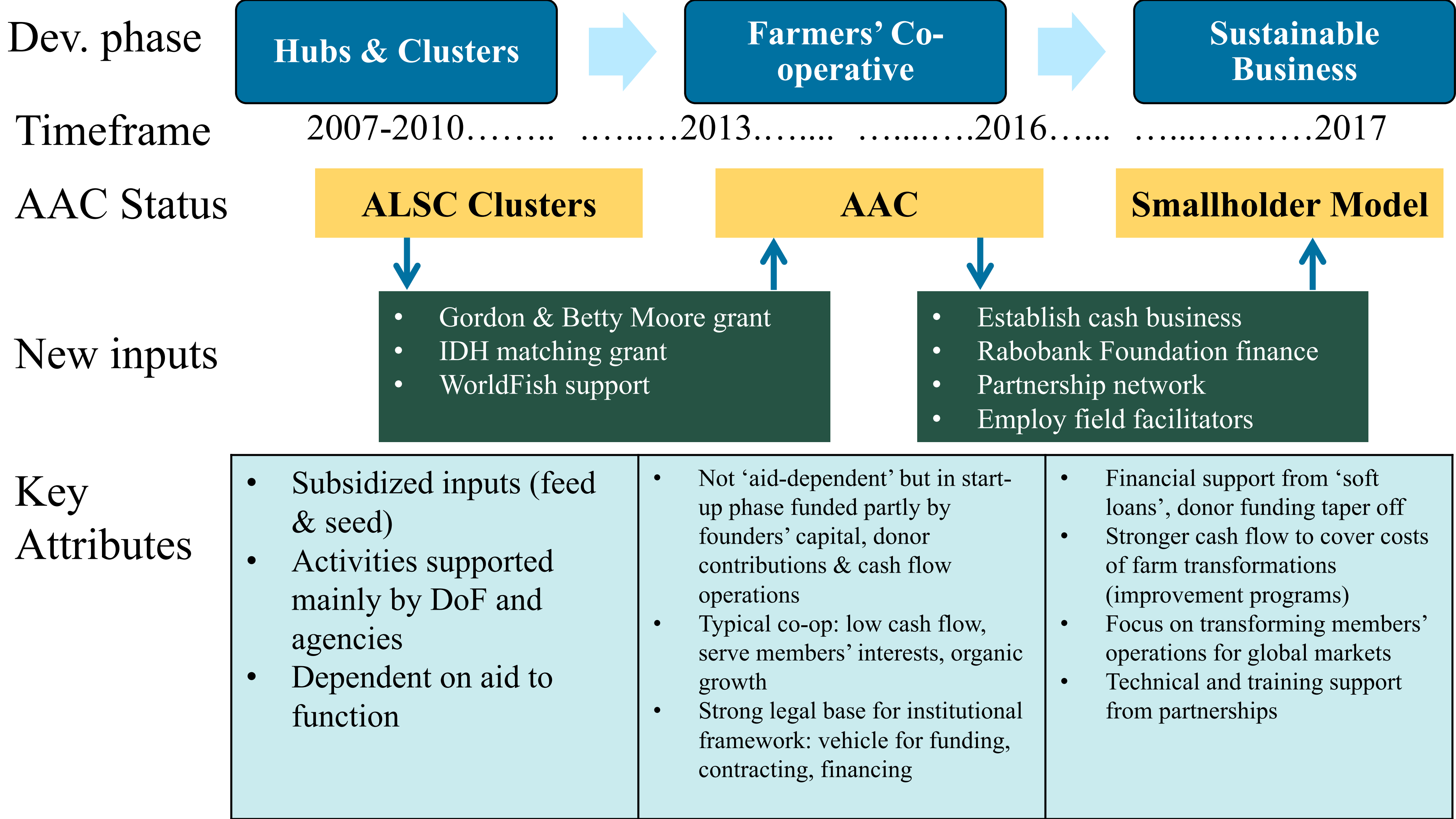
Dev. phase
Hubs & Clusters
Farmers' Co-operative
Sustainable Business
Timeframe
2007-2010……. ……..2013……. ………2016….. ……..……..2017
AAC Status
ALSC Clusters
AAC
Smallholder Model
New inputs
• Gordon & Betty Moore grant
• IDH matching grant
• WorldFish support
• Establish cash business
• Rabobank Foundation finance
• Partnership network
• Employ field facilitators
Key Attributes
• Subsidized inputs (feed & seed)
• Activities supported mainly by DoF and agencies
• Dependent on aid to function
• Not 'aid-dependent' but in start-up phase funded partly by founders' capital, donor contributions & cash flow operations
• Typical co-op: low cash flow, serve members' interests, organic growth
• Strong legal base for institutional framework: vehicle for funding, contracting, financing
• Financial support from 'soft loans', donor funding taper off
• Stronger cash flow to cover costs of farm transformations (improvement programs)
• Focus on transforming members' operations for global markets
• Technical and training support from partnerships

Blue Economy Challenge

Novacq™: A novel aquafeed additive that uses **waste** to eliminate **fishmeal**

Tilapia in Malaysia & Tanzania

Brackishwater prawns in Bangladesh & Indonesia

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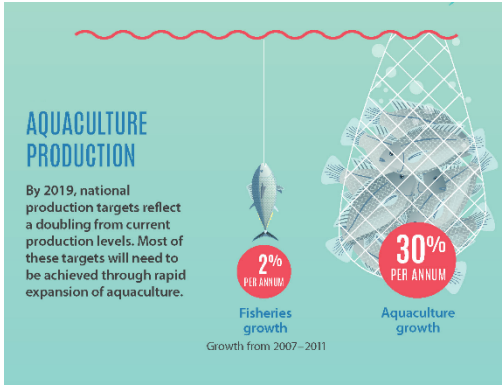
Indonesia Aquaculture Futures

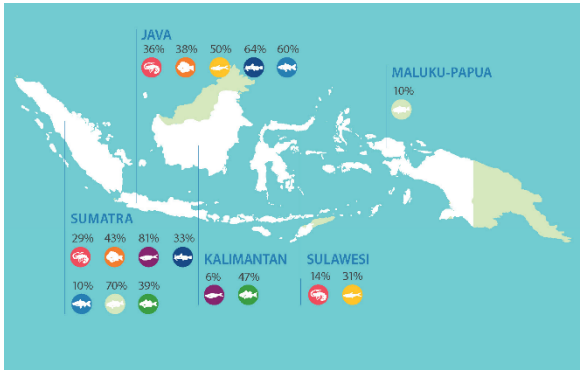
What are the possible development paths of Indonesia's aquaculture industry up to 2030, and what consequences of these for environmental, social and economic sustainability?



- Aquaculture models: species produced and/or production technologies
- Viable aquaculture improvements
- Model their influence on emissions
- Identify the ideal species/production technology matrix
- Share results and access viability.

Key Messages

- Many interventions may miss out on the particular needs of smallholders
- PPPs should consider the environmental requirements/ impacts of the production systems they target
- Opportunities exist to incentivize improvements across production systems



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For further information:

Smallholders

- Financing smallholder aquaculture enterprises
- Sustaining the impact of private investment
- Shrimp farming in Aceh improves lives for small scale farmers

Blue Economy Challenge

Life Cycle Assessment & Scenario Modeling

- Exploring Indonesian aquaculture futures (2015)
- Indonesia Aquaculture Futures 2018-2030
- An analysis of fish supply and demand in Indonesia to 2030 and role of aquaculture using the AsiaFish model
- Evaluating environmental and socioeconomic potentials and limitations
- Indonesia Aquaculture Infographic

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Thank You