The impacts of aquaculture on Myanmar's rural economy

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Outline

- The Food Security Policy Project
- Myanmar Aquaculture-Agriculture Survey (MAAS)
- Impacts of aquaculture on the rural economy
- Implications and the way forward

Food Security Policy Project (FSP)

- USAID & LIFT funded partnership implemented by MSU, CESD, and IFPRI – October 2014-2019

Objectives:

- Generating and disseminating new knowledge to address evidence gaps and inform better agricultural policy
- Capacity building and strengthening for research and policy at union and regional levels

Research to date on: Aquaculture and agriculture in Delta, Livelihoods and rural economy in Mon State; Agricultural mechanization; Agriculture and livelihoods in Dry Zone

Myanmar Aquaculture Agriculture Survey (MAAS)

- Builds on earlier qualitative study of aquaculture value chain
- Implemented May 2016

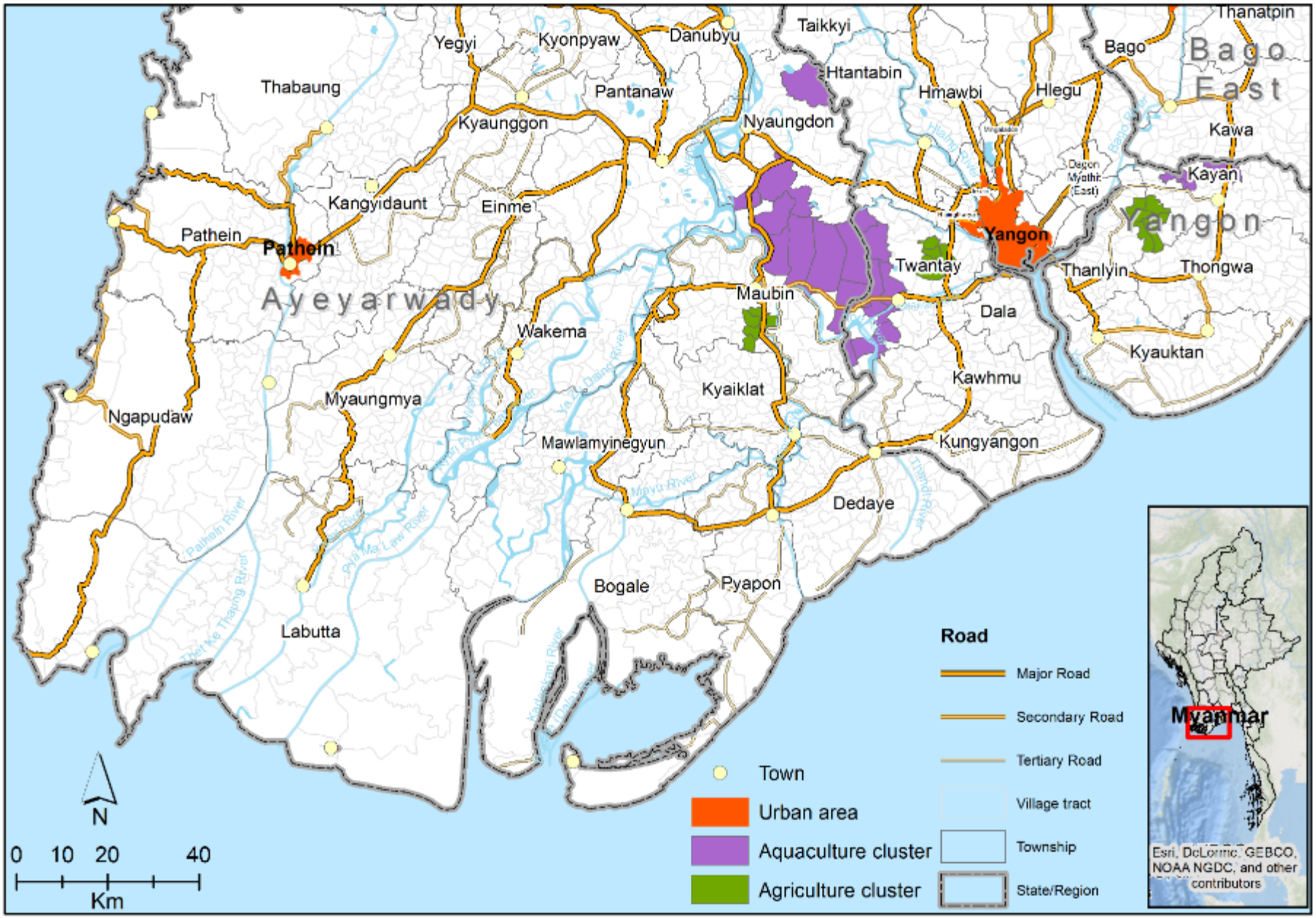
Aims

- Generate a baseline of information on fish and crop farming sectors
- Understand and quantify economic spillovers from aquaculture and agriculture

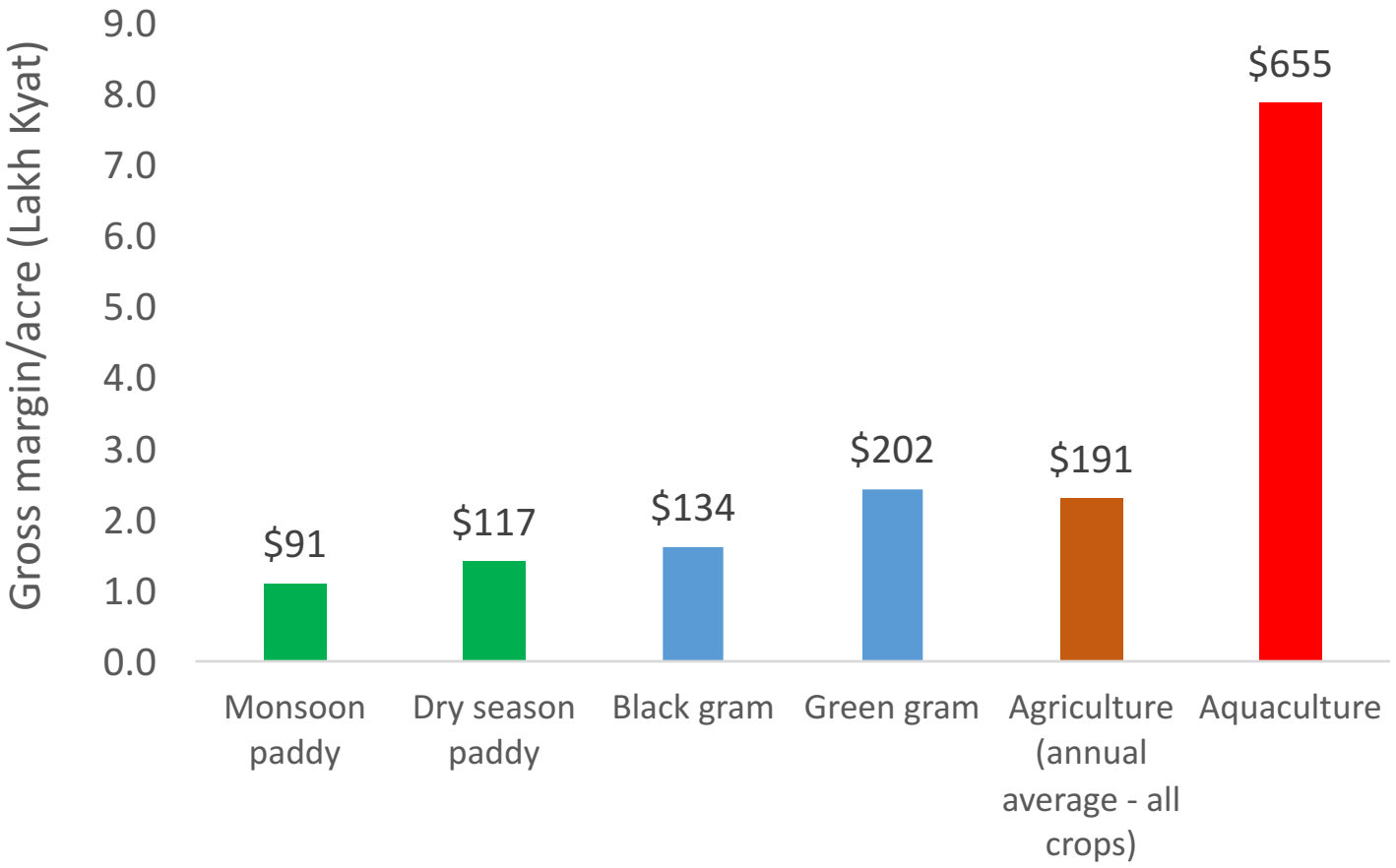
Survey Methodology

- Selected clusters of ‘aquaculture’ and ‘agriculture’ village tracts, based on spatial concentration of ponds and prevailing crop farming systems
- Randomly selected ‘enumerations areas’ and households to represent entire populations of both clusters (including non-farm households)
- Total sample = 1102 HHs (224 aquaculture HH) in 40 village tracts, representing 37,390 HH

Survey locations

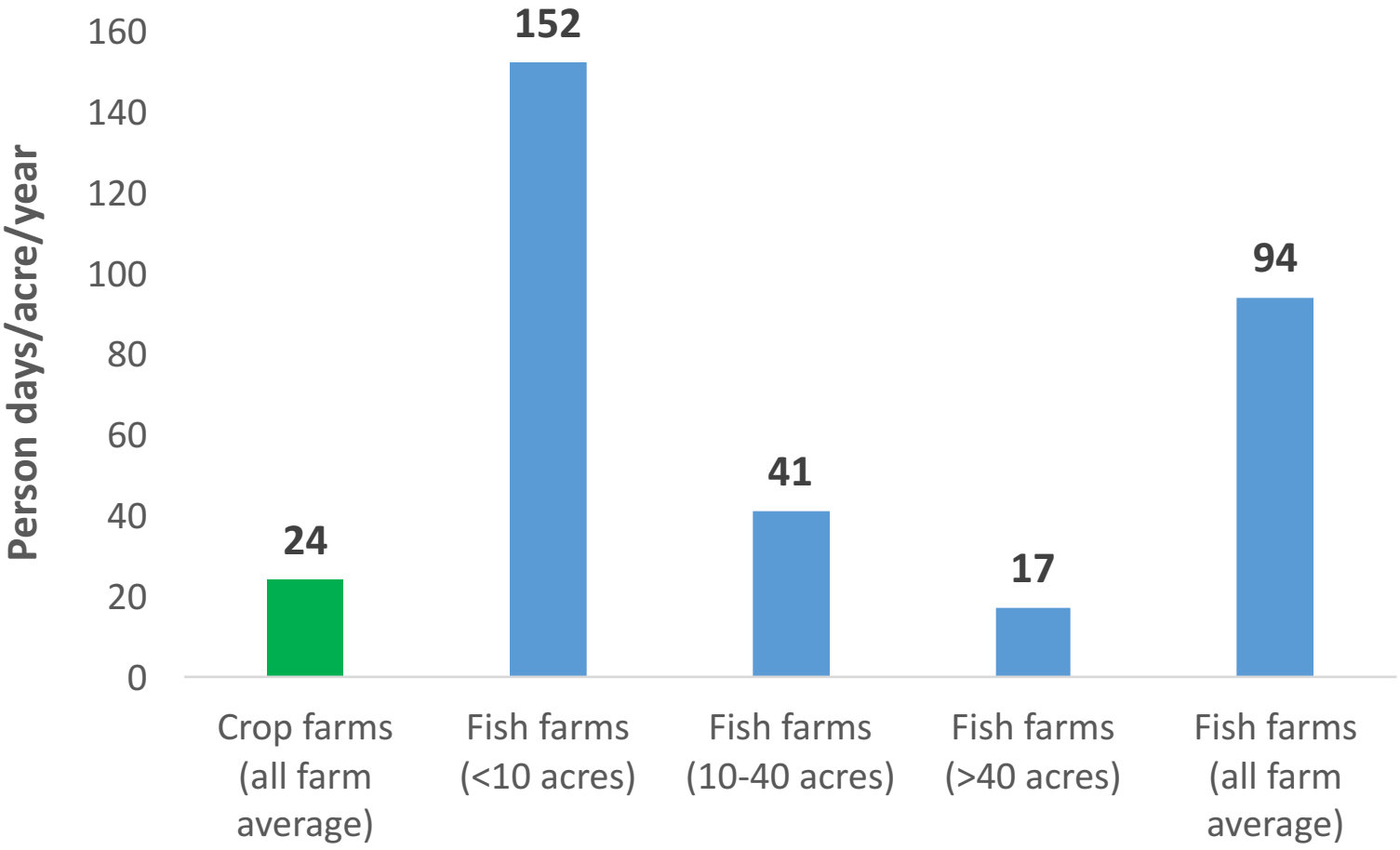


Returns from agriculture and aquaculture



Average profit margin per acre for paddy, pulses and aquaculture

Demand for labor in aquaculture and agriculture



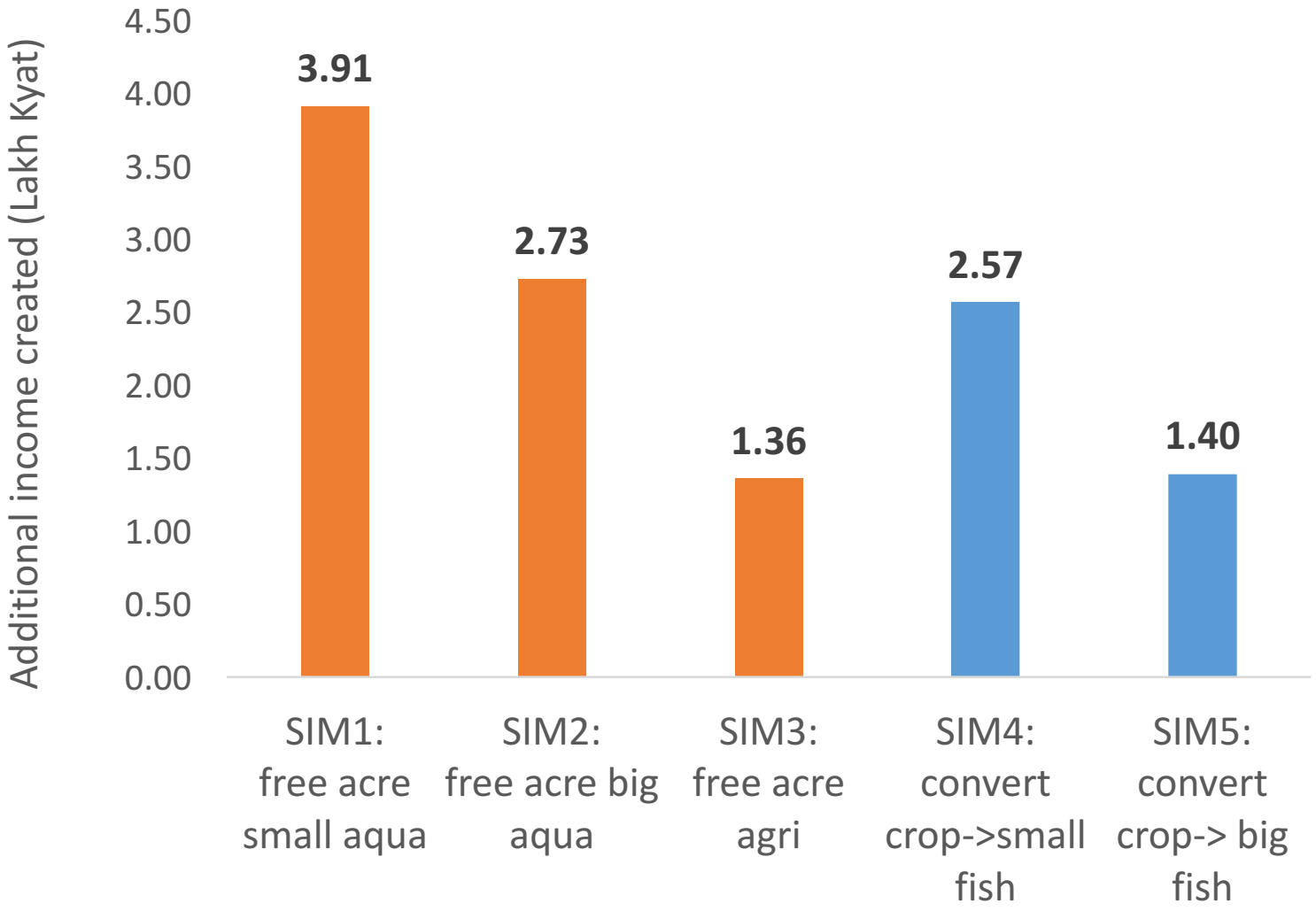
Average annual demand for labor (family + temporary + permanent) per acre, for agriculture, and fish farms of different sizes

Modelling the impacts of aquaculture on the rural economy

- Model comprised of 5 types of household (Small fish farm, Large fish farm; Fish nursery; Crop farm, Landless)
- Used data on all the economic activities of all households in aquaculture 'cluster' village tracts, including amount of land, labour, capital and production inputs, to model flows of money within rural economy
- 5 Simulations:

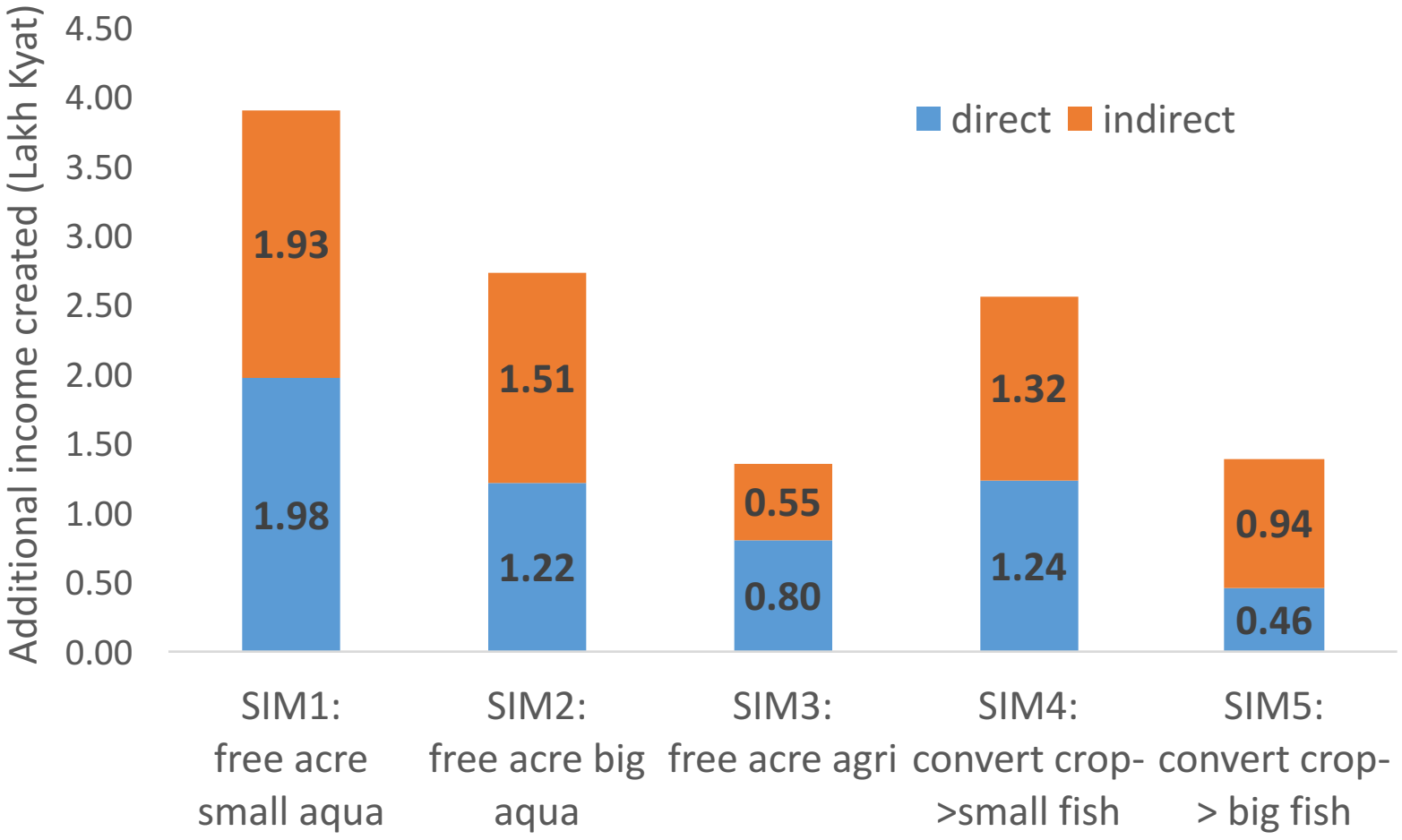
sim1	sim2	sim3	sim4	sim5
Give 1 acre to small fish farmer	Give 1 acre to big fish farmer	Give 1 acre to crop farmer	Allow small fish farmer to convert one acre of own crop land into pond	Allow large fish farmer to convert one acre of own crop land into pond

Income effects



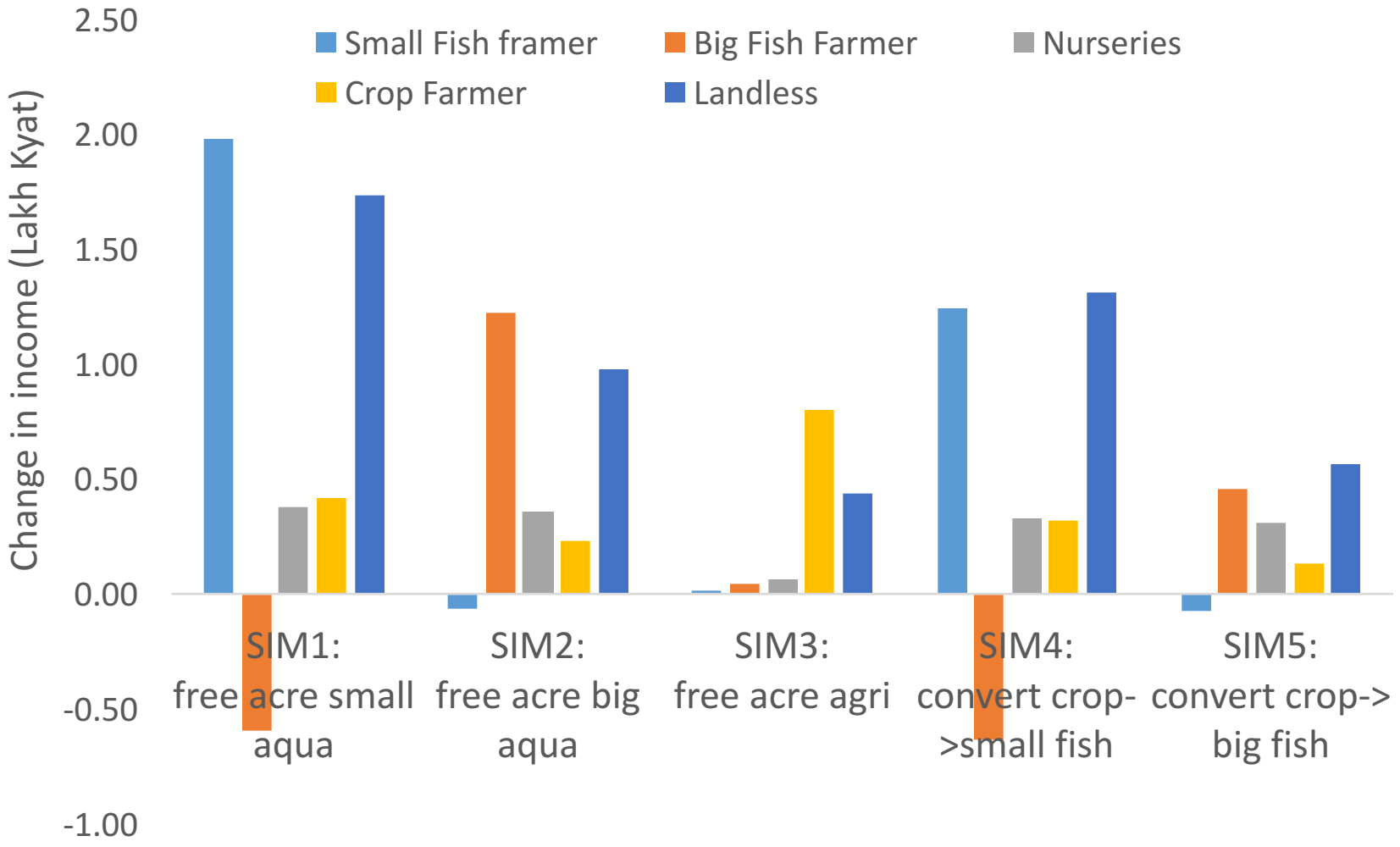
Change in total income in the economy

Direct and income effects



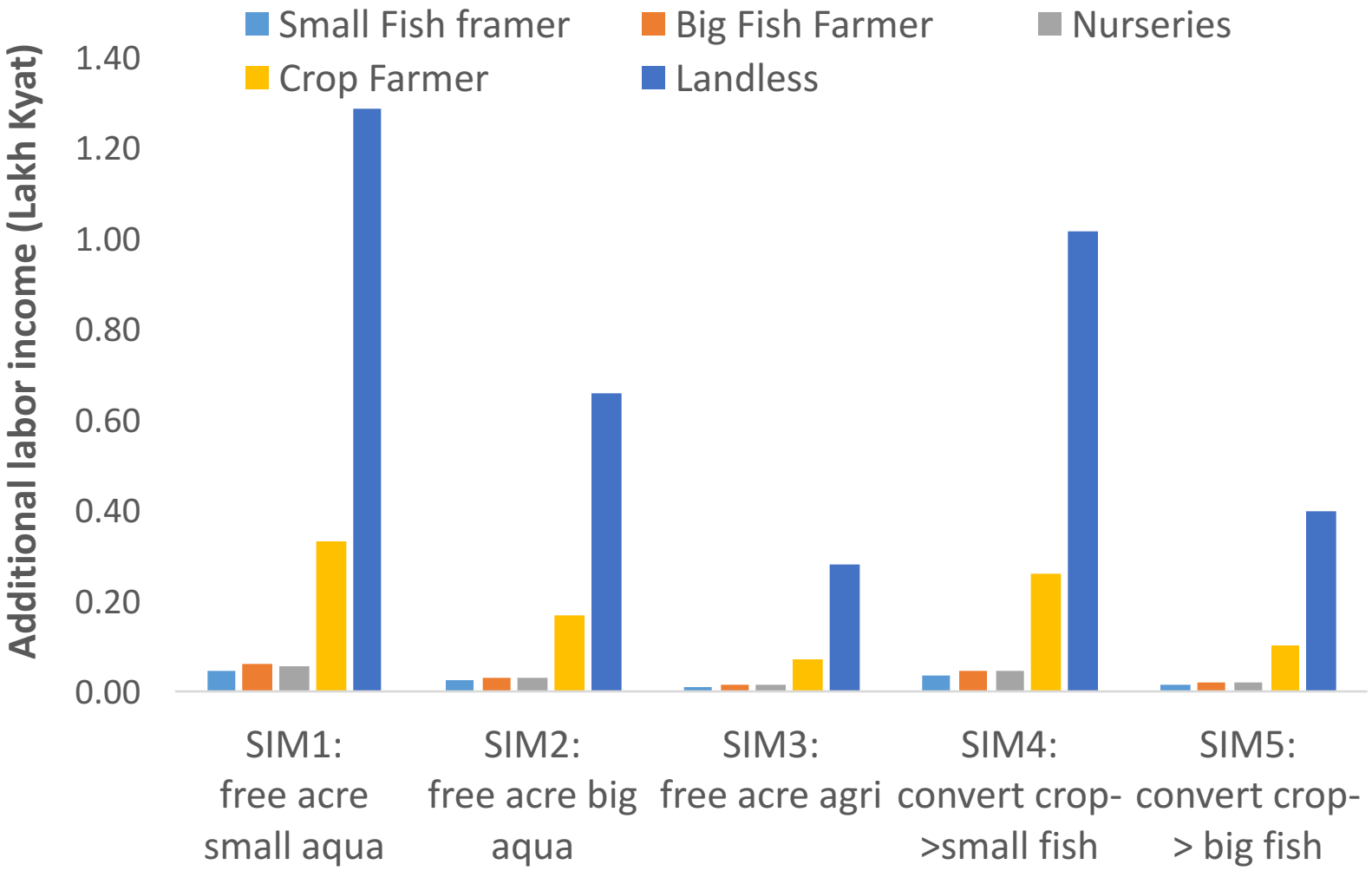
Income gain by direct and indirect beneficiaries

Distribution of income effects



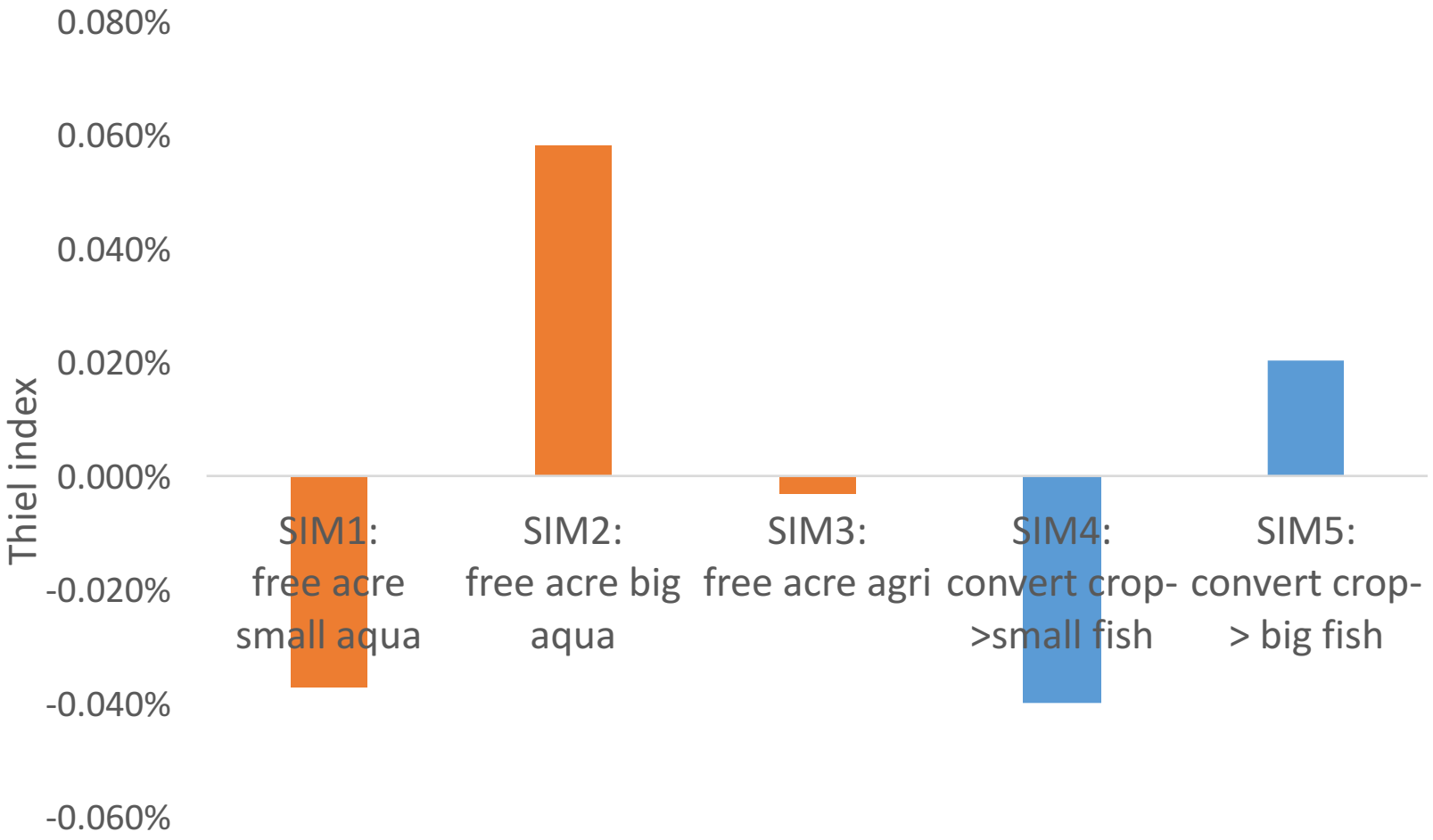
Income effects in simulations, by type of household

Effects on demand for labor



Change in labor income by household type

Income inequality effects



Effect on income inequality in the cluster (Theil index)

Take home points

- Average profits from aquaculture are several times higher than from crop farming
- Aquaculture creates more on-farm employment opportunities than crop farming (especially on small farms)
- For an equivalent increase in farm area, aquaculture creates more value in rural economy than agriculture
- About half of the value added goes to indirect beneficiaries (e.g. labor, nurseries)
- Small fish farms create larger income effects per acre than large farms, and these effects reduce income inequality. Income gains made by large farms increase inequality

The way forward

Future develop pathway options for Myanmar

- Facilitate smallholder inclusion in aquaculture (e.g. no restrictions on agricultural land use, better access to credit with suitable terms)
- Diversification of species farmed
- Supporting private and public investments (e.g. research, education, food safety, veterinary services).