

# Farmers' resilient decision-making on agroforestry diversification

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## Decision, decisions

The decision-making process, which presumably rests in the hands of farmers, associates heavily with entrepreneurial choices. It could be argued that farmers are not entrepreneurs because of the continual aids and subsidies obtained and not needing competitive efforts. However, farmer as an agent of rural change are recognising the existence of entrepreneurial skills. Diversifying farmers may pursue resource-based entrepreneurial strategies that seek to widen the range of farm-based opportunity-seeking activity.

## Location, location, location!

Besides farm structures and farmer entrepreneurial capacity, there is increasing acknowledgement that the spatial scale of the farm's location accounts for substantial influence on farmers' behaviour to diversification. Referring to social-ecological systems, where a coherent system of biophysical and social factors regularly interacts in a resilient and sustained manner, the spatial scale may be linked with temporal and institutional levels. It is expected that the geographical location may have an influence on decision-making in terms of diversification.

Landscapes are also where social, economic, and environmental objectives compete. While farmers are economically challenged to produce more on less land –hence, they diversify– they compete with environmental and biodiversity goals. In the social-ecological system approach, resilience is considered a function of the extent to which people are (i) exposed to change, for example, climatic or economic variability (ii) sensitive to that change, and (iii) have the adaptive capacity to cope with the change successfully. It is



Rice, clove, fruit trees, and timber agroforestry in a sloped landscape may reduce chances of annual flooding in Bantaeng, South Sulawesi, Indonesia (Aulia Perdana/ICRAF)

presumably worse when farmers decide to diversify in isolation. By not considering the diversification activities of multiple stakeholders involved and their adaptive capacity, and land multifunctionality, decisions to diversify may lead to conflicting objectives, distrust, higher transaction costs, and unmanageable trade-offs.

## Farmers diversify, why?

Diversification, which in its basic form, is a practice of producing a variety of products or, tactfully, a risk management plan, has been a favoured economic strategy in periods of farm income struggles. The need to make extra money represents the primary motivation for diversification.

## Proposition

In the context of agroforestry, representing social-ecological systems and where trees in agricultural systems buffer climate variability and provides income options, diversifying farming systems both ecologically and economically increase resilience of landscapes and livelihoods (Sinclair, Rosenstock, Gitz, & Wollenberg, 2017). Thus, the landscape approach values (Sayer, et al., 2013) and resilience are a vital overlay on farmers' decision-making on diversification.

Categories	Concepts
Decision factors	Factors affecting farmers decision-making
Decision processes	Farmers' decision-making process from detecting problems to implementing decisions
Decision events	Farmers' decision on the specific event under the special situation (uncertainty, risk, or multi objectives)
Decision evaluation	Evaluation of decision outcome or relationship between decision making and performance
Decision patterns	Major roles of main decision-maker
Decision aids	Decision support system (DSS) or other helpful means to improve farmers' decision-making



Figure 1. Landscape approach values and resilience are a vital overlay on farmers' decision-making on diversification