

Preserving Food Environments and Livelihoods: Transitions and Challenges for the Ca Dong people in Vietnam

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INTRODUCTION

- Food Environments: multifaceted factors influencing food decisions;
- Ca Dong people: Indigenous group in Kon Tum, Vietnam, known for their distinct culture and close ties to Nature. Their food environments change dramatically since resettlement from ancestral lands for the Dak Drink hydropower reservoir in 2013;

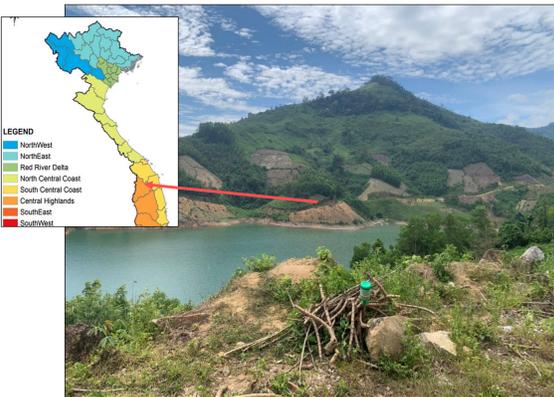


Fig.1: Map of Vietnam and Dak Drink hydropower reservoir, Dak Nen commune, opposite slopes cultivated with cassava and acacia monocultures (Source: ###, Photo: Tran (2023)).

- OBJECTIVE:** to explore food environment transitions of the Ca Dong; and to define options for supporting diverse and sustainable food environments;

MATERIALS AND METHOD

- Food Environments Analysis:**
 - Transdisciplinary and mixed method approaches;
 - Group discussions;
 - SWOT analysis landscape/farm;
- Identification of Possible Solutions:**
 - Transect walk and group discussion of forest food availability and diversity;
 - Spatial analysis of land areas suitable for local forestry species to transform monoculture;
 - Identify and model possible solutions, including agroforestry interventions in productive zones and potential home gardens;

RESULTS

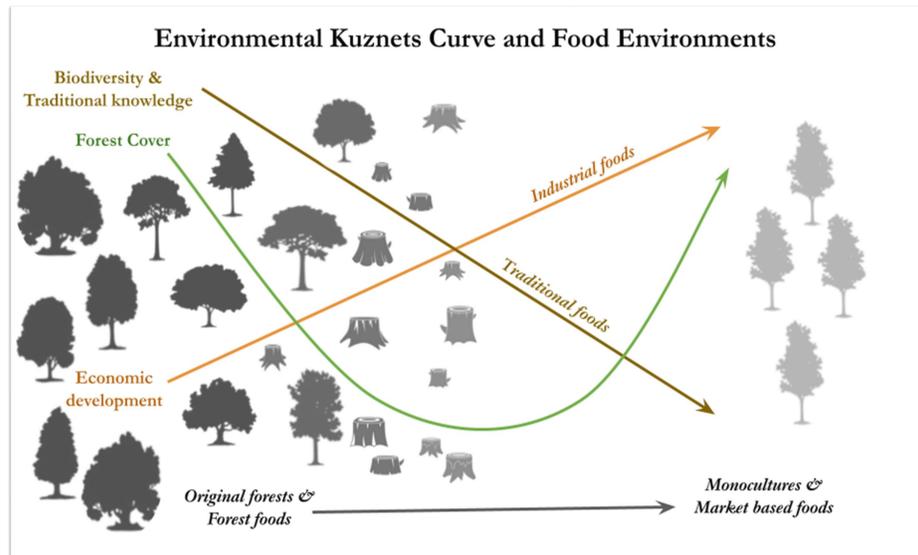


Fig.2: Food Environments and the Environmental Kuznets curve.

- Transformation from diverse forests to monoculture impacts ecology, traditional knowledge, and forest harvests;
- Influences food choices and livelihoods;
- The future of forest systems is uncertain;
- Indigenous communities face complex challenges: forests, food environments, poverty, culture, and resource protection;

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> Forest food part of daily diets & culture; Many food sources available; 	<ul style="list-style-type: none"> Seasonality/ food shortages; Increasing distance and time collect food; No wild seed preservation: risk of biodiversity loss; No local market at communal level; High malnutrition and little knowledge on nutrition and health;
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Possibilities for conservation and cultivation of food sources in home gardens should be exploited; Forest products with high economic, nutritional, and medicinal value and local dishes thereof with high value for tourism; Infrastructure construction is ongoing, improving accessibility and trade options; 	<ul style="list-style-type: none"> Land degradation; Unpredictable weather phenomena; Cassava is the only cash crop; Risk aversion reg. livestock keeping (past disease problems); Some risk of food poisoning in case of collection mistake (mushrooms) or unsafe/ insufficient food preparation; Infrastructure construction: availability of cheap and unhealthy food products;

Table 1: Preliminary examination of land areas that potentially are suitable for transforming cassava monoculture into Agroforestry using local species.

Local species	Least suitable (ha)	Most suitable (ha)
<i>Cinnamomum</i>	104	490
<i>Michelia mediocris</i>	104	41
<i>Hopea odorata</i>	104	490

Figure 3: Preliminary list of edible plant species widely available and possibly suitable for home garden cultivation.



STRENGTHENING LOCAL FOOD ENVIRONMENTS

- Research activities have enhanced capacity for local decision makers and villagers to understand challenges in local food environment and realize the diversity and needed regeneration of the edible plants in their environment.
- We will apply decision analysis approaches to assess interventions, supporting food environments;
 - Develop evidence-based solutions that balance economic development with ecological and cultural sustainability.
 - Model impacts of agroforestry options with suitable local species and land use.
 - Model the long-term impacts of edible herbs domesticated from forests and veggies in home gardens.



Preliminary satellite image analysis <http://rung-ray-ruong.org/>, SPERI (2022)