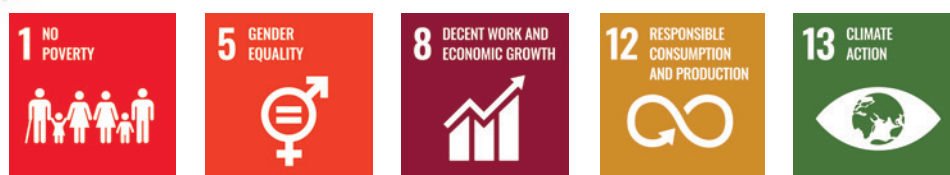


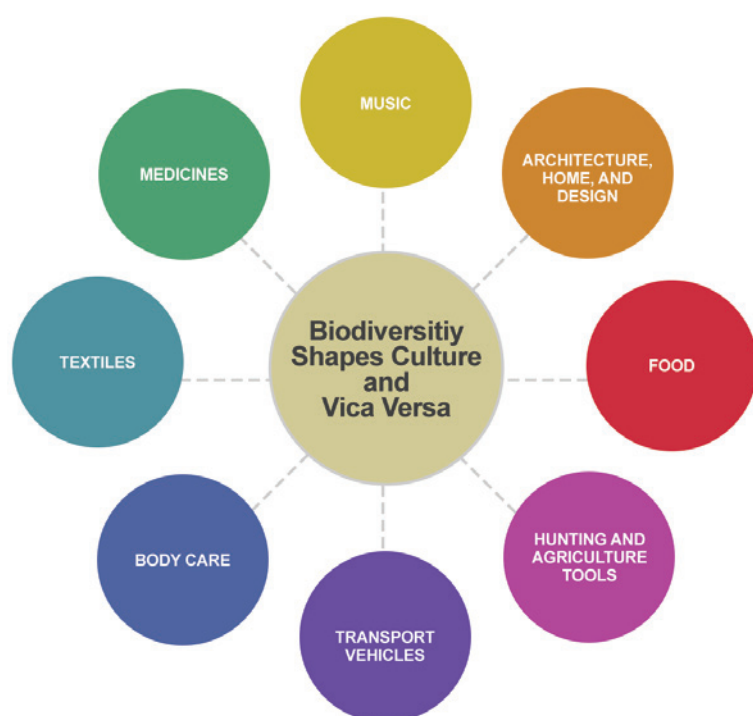
Civic Engagement In Asia – Transformative Learning in the Quest for a Sustainable Future



The Nexus of Biodiversity and Culture for Local Economic Development ⁱ

Introduction:

The role indigenous peoples play in conserving biodiversity is at the heart of the Convention on Biological Diversity's goals ⁱⁱ and is reflected in Indonesia's development policies.ⁱⁱⁱ Nonetheless, Indonesia has yet to enable and mainstream the sustainable use of biodiversity by indigenous peoples into its economic development programs.



The relationship between biodiversity and culture (Figs 1 and 2) can be explored using a positive and appreciative approach to understand the sustainable economic development possibilities within a community. Such an approach was applied by our organization, Sekar Kawung, in supporting the *ikat* (traditional woven cloth) culture of East Sumba.

FIG. 1:

Exploring the nexus between biodiversity and culture helps in the imagining process of product innovation for economic development.



FIG. 2:

Sumba Island is part of the Nusa Tenggara Timur (NTT) Province in Eastern Indonesia. The island's rich textile tradition is reflected by many areas with unique styles, several of which are noted on the map. Lambanapu and Mauliru are in Kambera, where the island's ancient seaport is located.

Biodiversity, *ikat* textiles and local economic development in East Sumba

Between June 2016 and February 2018, Sekar Kawung worked with *ikat* artisans in two villages, Lambanapu and Mauliru of East Sumba¹ to explore the potential of semi-wild agro-forestry trees in their landscape. Here artisans use more than 20 plants to create dyes, mostly semi-wild and gathered from nature. At project initiation, the average person in East Sumba had less than a primary school education, and the minimum monthly wage was approximately IDR 800,000 (= USD 61).² East Sumba *ikat* cloth is highly refined and is also highly valued among traditional cloth enthusiasts.

Participatory research was carried out to understand the *ikat* value chain, from the plants on the land to the pieces of cloth in the hands of the customer, in order to ensure ecological and justice values are delivered (Fig 3). The research process improved artisans' knowledge of their *ikat* cultural heritage, and their ability to tell the story behind their creations. Due to this improved knowledge, combined with capacity improvement,^{iv} over a period of 18 months sales increased significantly from eight pieces of woven cloth in the first quarter (valued at IDR 3,125,000), to 223 pieces in the sixth quarter worth IDR 777,903,000.^v

FIG. 3:

An ecologically and culturally friendly value chain captures added value in the village by the village community itself.



New uses of natural dyes by users from the cities has increased demand for plant material, opening a new economic opportunity for farmers.

¹ The *ikat* tradition in NTT Province, where East Sumba is located, constitutes an outstanding example of Indonesia's cultural heritage. Here *ikat* weaving remains a major living expression of East Nusa Tenggara's contemporary culture and identity where people still rely on this craft of high social and symbolic meaning both for social reasons as well as economic reasons.

² East Sumba is one of the poorest districts in NTT Province. In 2016 the Minimum wage in NTT Province according to the Indonesian Statistical Bureau (BPS) was IDR 1,425,000 (1 USD in December 2016 was 13,384.00 IDR)



FIG. 4:
A community of micro-businesses

TABLE 1:
New products in the expanded ikat value chain: ^{vi}

QUARTER	PRODUCTS	VALUE IN IDR
Q1	Dye services	1.410.000
Q2	Dye services	575.000
Q3	- Dye services - Indigo Paste - Souvenirs - Plain cloth - Woven ribbons (kabakil)	51.060.000
Q4	- Palm Leaf weaving - Kapok products - <i>ikat</i> shawls	47.080.000
TOTAL		100,125,000
<i>In 2017 1 USD = 13,360.00 IDR</i>		

Diversifying product options within each value chain link created a beehive-like community of micro-businesses, where each cell in the overall village economy is unique yet strongly interconnected (Fig 4) and (Table 1).

Other semi wild trees and economic options

Our organization also explored other potential plants in the village's edible biodiversity, including the mapping and geotagging of 400 tamarind trees, which are used in traditional medicine and cooking. Annually each tree easily bears 100 kilograms, meaning at least four tons of tamarind per year. But trees are scattered throughout the village and are not seen as an economic potential. Nonetheless, tamarind can stay fresh for a year if they are pitted, sundried and stored in clean and sealed plastic containers, making it easy to develop in remote places without electricity.

A micro-business experiment developed 100 kilograms of tamarind worth IDR 1,000,000.00 into drinks, pastes and jams using *lontar* palm sugar. During a four month trial tamarind sales brought IDR 27,832,000.00.

Kapok or *Ceiba pentandra* also thrives in the arid lands of East Sumba. Its fiber is gaining interest in the global sustainable fashion scene, as a more sustainable fiber than cotton.^{vii} The project explored its economic potential using it to fill cushions, which were then covered in handwoven *ikat* cases. Traditionally kapok fiber was used to make mattresses and pillows, while kapok tree trunks were used to make boats.

Conclusion and recommendations

Poverty, minimal formal education, and arid landscapes are major challenges to sustainable development in East Sumba. Capitalizing on the nexus between biodiversity and culture, which is present in the *ikat* heritage, could help to sustainably develop local economies.

Ikat artisans in East Sumba, like others in Indonesia, are almost entirely dependent on imported non-organic cotton yarn that is produced with chemical inputs, wasteful of water, and has a large carbon footprint. As a result, although home grown natural dyes are used in the making of *ikat*, the cloth produced cannot yet enter the growing sustainable fashion market niche.

Sustainable natural dye and cotton production could go hand in hand with food security programs, where the government supports agroforestry systems, which include plants such as, kapok, tamarind, palmyra palm (*Borassus flabellifer*), and other shade-adapted food plants.^{viii}

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- ⁱ Written by Chandra Kirana, from Sekar Kawung organization. Edited by Jeff Luzar and Mochamad Indrawan. Disclaimer: Any content expressed in this policy brief are those of the author and do not necessarily represent or reflect the views of Universitas Indonesia, nor Chulalongkorn University, nor Asia Pacific Network for Global Change Research (APN).
 - ⁱⁱ Linking Biological and Cultural Diversity, UNESCO – SCBD Programme: A global knowledge platform linking local, regional, national and international practices and experiences; COP 12, Pyeongchang, Republic of Korea 11 -12 October, 2014. <https://www.cbd.int/tk/culturaldiversity/messages.shtml>
 - ⁱⁱⁱ Indonesian Biodiversity Strategy and Action Plan 2015 – 2020; Kementerian Perencanaan Pembangunan Nasional/BAPPENAS, Republic Indonesia; file:///Users/chandrakirana/Desktop/chapter7/policy_brief/Dokumen_IBSAP_2015-2020.pdf
 - ^{iv} The capacity building included the provision of new technical skills, such as marketing and small business management, as well as infrastructure and equipment to enable an *ikat* cultural community based tourism to develop in the villages
 - ^v How biodiversity and culture can fuel economic prosperity: the case of traditional textile artisans of East Sumba, Indonesia, , Chandra Kirana Prijosusilo, Sekar Kawung Foundation, 2019.
 - ^{vi} Annex 4 to the MCAI Samdhana NTT, Green Prosperity Project Gender Integration Final Report; Sekar Kawung 2018.
 - ^{vii} Sustainable textiles innovations: Kapok Fibres, Simone Preuss, Monday 9 April 2018, Fashion United website: <https://fashionunited.uk/news/fashion/sustainable-textile-innovations-kapok-fibres/2018040929005> ; Future Fashion Lab: Hong Kong's First Sustainable Apparel Industry Festival, Sally Ho, November 6 – 2019, Green Queen Website, Hongkong: <https://www.greenqueen.com.hk/hong-kongs-first-sustainable-fashion-festival-future-fashion-lab-lands-this-november-2/>
 - ^{viii} Food Security and Vulnerability Atlas of Indonesia, 2015; Dewan Ketahanan Pangan Indonesia dan The World Food Program (WFP); <https://reliefweb.int/sites/reliefweb.int/files/resources/wfp276251.pdf>