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KEHATI
Indonesian Biodiversity Conservation Trust Fund

SORGUM

LOCAL FOOD CORRIDOR

For the Food Sovereignty, Independence, and Security of the Community

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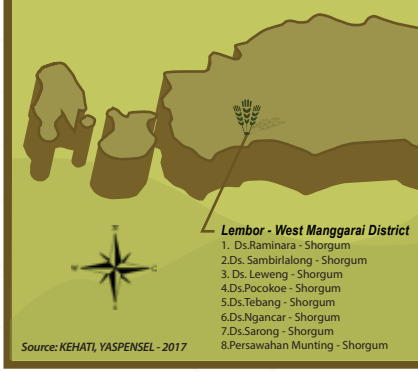
The current world population is estimated to be more than 7.5 billion people, 260 million of them are Indonesia's population. By 2050, it is predicted that the world population will reach 9.7 billion people and 321 million of them are Indonesia's. These people need food sources, mostly from agricultural sector. On the other hand, climate change has become a threat for agricultural production, where the largest impact is suffered by the poor.

In Indonesia, rice-related politics from the new order regime has created a very high dependency to rice and ignored other local food sources, such as sorgum, sago, tubers, and others. Food uniformity policy should have ended with the issuant of Law Number 18 Year 2012 on Food, which mandated the development of local food and provision of varieties of food.

Year	Area	Ditstrict	Regency
2012-2013	2 Ha	Adonara	East Flores
2013-2014	11 Ha	Adonara-Lembor	East Flores, West
2014-2015	60 Ha	Adonara-Lembor Demon Pagong Titihena Tanjung Bunga	East Flores, West Manggarai
2015-2016	102 Ha	9 kecamatan	East Flores, West Lembata,
2016-2017	120 Ha	10 kecamatan	East Flores, West Manggarai, Lembata
2017-2018	210 Ha	11 kecamatan (Dukungan KEHATI, YASPENSEL dan Swadaya)	East Flores, West Manggarai, Ende, Lembata,



KEHATI has pioneered the local food corridor program by mainstreaming sorghum commodity in Flores Island, East Nusa Tenggara. The Flores community is known for its high poverty, one of which is caused by its barren and rocky lands. Sorgum was chosen because this plant can live well in marginal lands, has high nutrient, and possesses strong cultural roots with the local community.

The local food corridor prog ram in Flores is also a form of adaptation to climate change, where many plants, includding paddy, are becoming more vulnerable as the global temperature rises.

Manggarai

Manggarai, Ende,

Ende,

Ngada

Sorghum ***[Sorghum bicolor (l.)Moenchi]***
* Average harvest /Ha = 2-4 tons/Ha
* Water-efficient
* Low-maintenance
* Adaptive to dryland
* Can be harvested multiple times a year
* Program empowers over 150 women

Omesuri - Lembata District
1. Ds. Wowon/Walangsawa

Nagawutun-Lembata District
1. Ds. Wuakerong
2. Ds. Baobolak

Adonara Island - East Flores District
1. Ds. WaiOtan (West Adonara)
2. Witihama (east Adonara)

Solor
1. Ds. Dani Wato

Kota Baru ENDE District
1. Ds. Kota Baru

Tanjung Bunga - East Flores
1. Ds. Riang Puho
2. Ds. Wai Kelibang

Detusoko - Ende District
1. Ds. Detusoko

Kec. Demon Pagong - East Flores
1. Ds. Kawalelo

Golewa District
1. Ds. Were

Kec. Titihena - East Flores
1. Ds.Serenuho

Sorghum itself is known as a plant that is resilient against climate change. KEHATI, together with sorgum women farmer groups, have developed this program to various districts in Flores Island with three hubs, namely Likotuden in the eastern area, Ende in the central area, and Lembor in the western area.

The program of sorghum in Flores is closely linked with Sustainable Development Goals (SDGs), namely Goal 1 (No Poverty), Goal 2 (Zero Hunger), Goal 3 (Good Health and Well-being), Goal 12 (Responsible Consumption & Production), and Goal 13 (Climate Action).

SORGUM in Likotuden – East Flores

Likotuden Hamlet, Kawalelo Village, East Flores District, was initially marginalized due to its hot and barren condition. Prior to being introduced to sorgum, the people planted paddy and corn for their food. However, the drought in recent years has caused harvest failure to both paddy and corn. As a result, most of the people rely on subsidized rice from the government as their food source.

When sorgum was reintroduced in 2014, only a handful of people were willing to try this plant out, while most of the villagers said no. The people then witnessed good harvest of sorgum, while other plants failed. This drove almost all villagers to plant sorghum.

Now, Likotuden is known as the home of sorgum and has become the sorgum development center in Flores Island, owning a production facility housing a myriad of sorgum processing machines, such as threshing machine, milling machine, wringing machine for sorgum stems, shredding machine, and packaging machine. The people also goes back to consuming sorgum as their staple food, including infants, who are starting to be introducted to sorgum as a supplementary food through Community Health Center (Puskesmas) program. Sorgum farmers in Likotuden has agreed to consume 40% of their harvest, and 60% will be sold.

The success of sorgum program in Likotuden is thanks to the work of YASPENSEL as KEHATI's local partner. One of the champions of YASPENSEL is Maria Loretha, who is famously called Sorgum Mommy. For her hard work promoting sorgum as the local food in Flores, Maria Loretha has received a plethora of awards, such as KEHATI Award, Kartini Award, Ashoka Award, She Can! Award, and others.

"From heart to heart building good relationship between sorgum farmers, Yaspensel, and KEHATI Foundation. Time flies, it has been five years since we worked together. If you work with your heart, you will reap the success".

Mama Loretha

SORGUM in Ende – Central Flores

For the people of Kotabaru Village, Ende District, sorgum has a strong cultural root, because it is used for the spiritual release ritual ceremony. Sorgum was also initially the traditional food of the villagers, before they slowly shifted to rice since the food uniformity policy.

KEHATI has reintroduced sorgum as a highly nutrient local food since 2014. Interestingly, the comeback of sorgum as the local food is initiated by enthusiastic youth. These youth planted sorgum in dry lands and brought in its seeds from Likotuden. Maria Loretha diligently provide mentoring to young farmers in Kotabaru on how to plant sorgum. At this time, Kotabaru has become the sorgum development center in the central area of Flores Island.

SORGUM in Lembor – West Flores

The Lembor area, West Manggarai District, is a lush field area with the most extensive irrigation flow in Flores Island, becoming the largest granary in East Nusa Tenggara. However, a number of farmers whose fields are located in the downstream area often do not get their share of the water, therefore experiencing harvest failure. In addition, the planting and maintenance cost of paddy is significantly high as a result of the use of chemical fertilizers and pesticides.

When sorgum was reintroduced as the local food, Lembor farmers were enthusiastic. They used their abandoned dry lands to plant sorghum. After the sorgum land relocation insident in Lembor, the Minister of Agriculture has declared a 1,000 ha sorghum planting area in Florest Island.

Lembor in the western end of Flores Island is the initial point of KEHATI's sorghum local food corridor program, before gradually moving to Ende in the central part, Larantuka in the eastern part, and even in Adonara Island, Solor Island, and Lembata Island. Now, the sorghum local food program has become its own movement in Flores

About Sorgum

Sorgum (Sorgum bicolor sp) is known to originate from Ethiopia, one of the countries within the Horn of Africa territory. From Ethiopia, sorghum spread to East Africa, West Africa, and North Africa. From the African Continent, sorghum spread to Asia, including Indonesia. Precisely when sorgum entered Indonesia is unknown, but it is one of the food etched on the relief sculptures of Borobudur Temple, which was built on the 8th century. Several areas in Indonesia have various local names for sorgum, such as cantel in Central Java & Yogyakarta, gandrung in West Java, and batari among Malayans. Meanwhile, in Flores, the local names for sorgum are watar belolong (high corn) and watar solor (solor corn).

As a food source, sorgum has a complete nutritional content, namely calorie, protein, fat,carbohydrate, calcium, iron, phosphorus, and vitamin B1. Sorghum is known to be rich in fiber, antioxidant, gluten free, and has lower glycemic index compared to rice, therefore suitable for people with diabetes. FAO (2016) reported that sorghum is the fifth most produced food source, after wheat, rice, corn, and barley, where the United States is the country with the most sorghum production of 12.1 million tons per year, followed by Nigeria 6.9 million tons, Sudan 6.4 million tons, and Mexico 5 million tons. Meanwhile, sorghum production in Indonesia is barely incalculable.

Sorgum is an adaptive plant that can grow even in dry and barren lands like Flores. Cultivating sorgum only requires low maintenance cost and does not need fertilizers and pesticides. Therefore, sorgum prodcuts can be categorized as organic. In addition, compared to paddy, sorghum is far more resilient to climate change currently sweeping across the globe.

Local Food Policy

Law Number 18 Year 2012 on Food was issued with the awareness that food is people's most basic needs, and fulfilling it constitutes as human rights. This Law also acknowledges that Indonesia is a country with a myriad of natural resources and food sources. Therefore, the government is responsible for developing local food production and diversifying food.

The Food Law mandates the need for further regulations through Government Regulation for a number of important issues, such as diversifying food and improving the people's nutrition. Based on this mandate, the government then issued Government Regulation Number 17 Year 2015 on Food Security and Nutrition. This Government Regulation explains that food diversification is an effort to increase the availability of various food and based on local resource potential.

Hence, the local food corridor program developed by KEHATI is in line with the regulation's mandate and contributes to improving the welfare of farmers in Indonesia. Sorgum farmers in Flores are even planning to submit a proposal to the government to no longer send them subsidized rice.

Challenges in Local Food Development

The primary challenge of local food corridor program development is changing the consumption pattern of the people, who are extremely dependent to rice as their food source. This is a result of the rice bias policy occuring since the new order era. The food uniformity policy has penetrated to many regions in the country, making people feel ashamed when not eating rice or as if they have not eaten if they have not consumed rice.

With this rice-heavy policy, various regions in Indonesia have been trying to create new rice fields, even though their lands are not necessarily suitable with paddy. In addition, farmer are used to utilize chemical fertilizers and pesticides, which are actually burdening the production cost. In the long run, this conventional farming can damage agricultural lands, leading to decreased productivity. From the consumer side, conventional agricultural products can potentially be disruptive to people's health, both in short and long term.

With this in mind, there are two challenges in developing local food corridor program, namely from the supply and demand side. From the supply side, farmers are challenged to replant and maintain local commodities such as sorghum, sago, tubers, and others. Meanwhile, from the demand side, the community as consumers are challenged to go back and consume various local foods.

Local Food Prospect

The offered solution is to develop local food corridor program that can address these two challenges. From the supply side, KEHATI will continue to encourage farmers to plant and maintain local plants as food sources. In Flores, strengthening sorghum agriculture will be done through three developed hubs, namely Likotuden in the east, Ende in the central, and Lembor in the west. In the near future, KEHATI will scale up the sorgum program to Sumba Island, East Nusa Tenggara, which has similar land and climate condition with Flores Island.

From the demand side, KEHATI will continue its local food consumption campaign, as it has done in Likotuden, by providing sorgum as supplementary nutrition for infants. This local food consumption campaign also targets school children and adults, including by developing processed local food. These are expected to be food souvenirs unique to Flores.

With the combination of supply and demand approach, KEHATI will achieve the dream of local food corridor program: The local people are able to fulfill their food needs by optimizing the surrounding natural resources, leading to food sovereignty, independence, and security.

About KEHATI

Indonesia's biodiversity situation isn't without hope. Since 1994, KEHATI has continued to cooperate with its partners in conserving biodiversity and in supporting conservation efforts, and its sustainable use. KEHATI built partnership in order to push community's participation; involving businesses and other groups in conserving biodiversity. Since its foundation KEHATI has worked with more than 1000 partners all over Indonesia.

> **Sustainable nature for humanity and the future of our generation**

Strategic Programs

Agriculture Ecosystem

- Sustainable food sorghum
- Sustainable food sago
- Organic farming
- Governance of palm oil plantation
- Governance of coffee plantation

Forestry Ecosystem

- Biodiversity conservation
- Forest conservation and rehabilitation
- Conservation of endangered animals
- Agroforestry
- Bamboo conservation

Coastal and Small Islands

- Coastal carbon connection
- Coral reef conservation and rehabilitation
- Conservation of endangered animals
- Coastal ecotourism and waste management
- Marine Protected Area (MPA) management

Special Programs

TFCA SUMATERA
TROPICAL FOREST CONSERVATION ACTION

TFCA KALIMANTAN

BLUE ABADI FUND

SPOS INDONESIA