THE STORY OF RICE IN BALI

Emas Hitam
INDONESIA

Navdanya
international

Rice Cultivation in Bali

History of Rice in Bali: The cultural and religious significance of rice

Rice is the staple food of half the world's population and is one of the world's most important crops. Rice cultivation in Bali goes back at least 2000 years. The current method of irrigation goes back at least 1000 years. Evidence of wild rice on the island of Sulawesi dates from 3000 BCE. Evidence for the earliest cultivation, however, comes from eighth-century stone inscriptions from the central island of Java, which show kings levied taxes on rice. Rice production in Indonesian history is linked to the development of iron tools and the domestication of wild Asian Water Buffalo, as water buffalo were essential for the cultivation of fields and manure for fertilizer. Rice production requires exposure to the sun. Once covered in dense forest, much of the Indonesian landscape has been gradually cleared for permanent fields and settlements as rice cultivation developed over the last fifteen hundred years.

Divisions of labor between men, women, and animals that are still in place in Indonesian rice cultivation and were depicted in carved relief friezes in the ninth century Prambanan temples in Central Java: a water buffalo attached to a plow; women planting seedlings and pounding grain; and a man carrying sheaves of rice on each end of a pole across his shoulders (pikulan).

The Origins of Rice in Bali
In the beginning Balinese only knew sugar cane. Dewa Wisnu (affectionate and protecting God, personified as water) wanted to create better food for his human subjects. His marriage to Sang Hyang Pertiwi (Mother Earth) gave birth to rice. The God Indra then taught humans how to grow rice and harvest, which then took over as the staple food of the Balinese people. Dewi Sri is now worshiped as the goddess of rice and prosperity, with places of worship specially devoted to her, as well as a special day of the month called "Hari Bhatari Sri''. A successful harvest has since become a determinant for the sustainability of surrounding societies, as it is believed that great forces aid them in achieving good harvests. That great power is manifested in Dewi Sri.

In the sixteenth century, Europeans visiting the Indonesian islands saw rice as a new prestigious food served to the aristocracy during ceremonies and feasts. But colonialism changed agriculture in Indonesia. Instead of cultivating crops for subsistence, farmers were ordered by Dutch authorities to cultivate commodities– like coffee, tea, tobacco, and sugar cane– that were highly valuable on the global market. Eventually, this led to a significant decrease in the production of products for everyday life, resulting in famine in several areas of Indonesia.

The Japanese occupied the Dutch East Indies (now Indonesia) from 1942 to 1945. They shifted the focus of farming back to carbohydrates, especially rice. After independence, especially during the New Order era (1969-1998), rice remained the main crop pushed by the government. However, the production of other commodity crops continued.

Local Rice Varieties

When farmers started growing rice in ancient times, it was seen as a blessing from the Gods. Today, rice is still sacred, forming a central part of every ceremony as an offering, as a ceremonial food, and sacred symbol. For example, rice is used as a bija and placed on the third eye. Balinese rice culture is hence seen as a source of reputation, recognition, and most of all, a source of sacred livelihood.

Because of this, local seeds have always contributed to the unique identity of each part of Bali. Throughout time these rice varieties have co-evolved and adapted to the landscape, climate, water, environmental conditions, and people's needs, forming a central part of the reproduction of Balinese life.

Before the introduction of the Green Revolution, there used to be approximately 15 local rice varieties native to Bali alone, with many other native varieties existing throughout Indonesia. As a result of the imposition of hybrid varieties and their accompanying Green Revolution package, local rice varieties have now gone down to five. Today, Emas Hitam Indonesia (NGO) is working with rice farmers to bring back the remaining native rice varieties, working with Balinese rice breeders to find and improve the quality of local seeds that have already adapted to today's climatic shifts.

Out of the varieties of native Balinese rice, there are three colors: red, white, and black, with many different varieties for each type.

White rice is sacred, secular and a social currency in Bali and it is normally used for daily religious offerings. Throughout the island, it can be seen hanging everywhere to bring good luck. This rice is the actual staple food in Bali. It is the centerpiece and the basis of every meal on the island of the Gods, as "nasi" means "cooked rice" but also means "meal".

Black rice: In terms of yield, after white rice comes the black rice called Injun in Bali. It produces a more limited yield than then white. While in the fields it remains undifferentiated from its white rice counterpart, these varieties turn black when harvest time approaches. These varieties of black rice are used as the main ingredient in desserts as sticky rice flour, and are also fermented, or used as a topping. Black rice also has ceremonial uses, such as for the Balinese rice cakes and other ceremonial foods.

Red rice is the least grown and one of the most expensive rice produced in Bali. It appears pink rather than red and takes about 3 months and 10 days to grow. It is mostly used in temple offerings.

Fragrant rice, similar to Indian Basmati rice, which is only grown in Bali is considered a holy rice, only to be eaten during festivals. Due to taking six months to grow it is also the most expensive.

Different rice varieties take more time than others to grow. Some can take as little as three and a half months, while others need up to six months before they can be harvested. Since local, indigenous varieties can take longer to grow than hybrid varieties, some farmers are weary to make the shift to local, organic varieties.

The Subak System and the Tri Hita Karana Philosophy

Subak is a Balinese word first found in royal inscriptions in the 11th century meaning "open" or "open the gates". Since then, Subak has designated a unique social and religious institution, made up of a network of self-governing, democratic associations of farmers who share responsibility for the just and efficient use of irrigation water to grow paddy rice. The subak water temple networks are based on a central water temple placed at a water source, from where they manage the ecology of rice terraces at the scale of whole watersheds. In essence, the Subak system organizes the island, acting as a community's center for cultural, religious, and agricultural decision-making and participation, where key decisions are democratically taken on the use of water and agricultural resources. Water is then evenly distributed through an integrated network of simple irrigation channels connected to corresponding rice fields. The system of interconnected communities and resources forms a cultural landscape of five rice terraces and their associated water temples placed at a water source and covers approximately 19,500 hectares. The whole island is connected through the Subak networks, evenly distributing water throughout the whole island, and allowing for the cultivation of rice on both mountain terraces and flat land.

At the Subak members of the community decide when to plant, when to perform sowing and harvest festivals, when and how much water is given to each member, as well as conducting various water-related ceremonies for the rest of the community. Each Subak center is managed by federations that are made up of farmers who receive water from the Subak, as well as leaders whose role is to observe them from an integrated perspective. Although they are only legally recognized as a simple mechanism of irrigation, subaks are a much deeper, ancient system of manifested beliefs that guide the way people relate to each other and how they relate to other spheres of natural and spiritual life. The system is an expression of community relations in Bali and serves to connect all the elements of nature and spirit that make life possible, making water central to religious life in Bali (Source World Rainforest Movement, 2019).

This Subak system is an integral part of the life experience of Balinese communities as it forms a complex and holistic system of various units forming an interconnected cultural landscape.

a. Technological unit: Made of water distribution systems, gates, and canals. This unit allows equal water access to all the members of Subak for irrigating their lands.
b. Legal unit: This unit is responsible for maintaining law and order at a basic level, and is established as a mini law society with a law book termed as *awig-awig*. It resolves the issues regarding public compulsions, land and water use, and territorial disputes.
c. Societal unit: It comprises all the members of the community cultivating land in the boundaries of the Subak and using water from the Subak irrigation system.
d. Physical unit: It establishes the physical boundaries of each Subak depending on the lands irrigated by the Subak irrigation system.
e. Spiritual unit: It acts to organize religious and spiritual ceremonies according to community belief at Subak level asking for protection of the rice crop from disease and destruction and praying for a healthy harvest.

Two characteristics of the Subak System stand out:
a. Cultural innovation: creating a landscape of spectacular beauty that has provided an ecologically sustainable foundation for Balinese civilization for the past millennium.
b. Their success as a system of cooperative resource management sustained by decentralized, self-governing, democratic institutions.

In total, Bali has about 1,200 water collectives, and between 50 and 400 farmers manage the water supply from one source of water (Source: UNESCO). Each Subak is composed of around 80- 85 farmers with Subak leaders being chosen democratically by the Subak members. Prior agreement is reached on how much and when water is released into each farmer's field based on each farmer's cultivation area and specific water needs. The amount of water is dependent on the area of the farmer's cultivated land area. Two members are chosen to open and close the different gates used to channel the water flow. Once this is decided no one disturbs the system and no one closes the gates without permission from the entire Subak membership. Maintenance of canals and other infrastructure is all done together, as well as decision making on extraordinary exceptions to water distribution.

Each member also takes part in ceremonies done at the beginning and end of each season for both themselves and the community, both at the Subak temple and at temples on farmer rice fields. During sowing time, fields are blessed with holy water from the temple, and before harvest, ceremonies are performed to ensure a successful harvest. During harvest, farmers donate part of the rice harvest to the temple for use in ceremonial rites and to show gratitude to the Gods. Farmers also have temples in rice fields that are individual mirrors of larger Subak temples where ceremonies are also performed.

Rice Cultivation Techniques

Within each rice field, a variety of traditional techniques were used. Prior to 1950, farmers grew local traditional rice varieties, followed by a rotation crop (palawija) of usually soya beans in the dry season. They used only natural fertilizers—green material and cattle and chicken manure—and pesticides were made naturally from ash and local plants. Around 1950, farmers began replacing the rotation crop with a second crop of rice to alternate the varieties used throughout the year. This type of rice rotation is mostly seen in West Bali, as opposed to East Bali, where more varieties have been lost.

Examples of Rice cultivation methods Kadek Suardika, co-founder of Emas Hitam Indonesia (NGO), learned from his grandfather:

- Spreading ashes in the rice fields was once used as a common practice in preparing the field and to prevent pests. It has now evolved to a new technique known now as "biochar".
- Previously farmers would use fermented rice leftovers to spread in the rice field to inoculate the soil and kill the pathogens. Today this is now known as using 'trichoderma'.
- Spreading dry leaves like bamboo leaves as mulch to prepare the land for rice.
- After cutting the rice grass, it was used to prepare and mulch the land for fruits and vegetable crops, allowing for no need for compost or fertilizer. This technique stopped the burning of leftover grasses and rice straw and instead turned them directly into compost.
- Adult ducks are left to walk in the rice fields to clean out weeds and pests, while also providing another source of food for the Balinese.
- M*inapaddy* or using fish to control pests by creating a canal around the planting area, but this method is hard to use when the water resources are decreasing.

The Tri Hita Karana Philosophy

The Subak system is a manifestation of the Balinese Tri Hita Karana philosophy which seeks harmony between nature, people, and spirits and is based on systems of reciprocity. Tri Hita Karana philosophy, which brings together the realms of the spirit (parahyangan), the human world (pawongan), and nature (palemahan), was born of the cultural exchange between Bali and India over the past 2000 years and has directly shaped the landscape of Bali. The water temples, subaks, forests, lakes, and rice terraces of Bali are living expressions of the ancient and enduring concept of Tri Hita Karana.

The Subak system ensures harmony between people through democratic decision-making and community-making. Harmony between people and spirits is ensured through regular cultural and religious ceremonies to give offerings and say thank you to the Gods; and harmony between people and nature, as well as nature and spirit, is ensured through the careful protection of resources and reciprocal maintenance of natural systems.

The religious aspect of the Subak originates from the belief that irrigation water is a gift from the Goddess of the Lake, Dewi Danu. Subaks are entrusted with the management of this gift, and farmers contribute a small portion of their harvest each year to religious rites in subak temples, which are dedicated to Dewi Danu, and other deities associated with the fertility of the land in order to show reciprocal gratitude.

Temples use and bless different pools of water to also serve different spiritual purposes, such as cleansing the mind and body, for good luck, to bless, cure, and so on. The rituals performed in the water temples draw their inspiration from several ancient religious traditions including Saivasiddhanta and Samkhya Hinduism, Vajrayana Buddhism, and the uniquely Balinese tradition of Pradhana, which honors the feminine powers of fertility, growth, and transformation.

The focus of water temple ceremonies is the maintenance of a harmonious relationship between humans and the natural world. This is achieved through active engagement with spiritual concepts which emphasize the human community's dependence on the life-sustaining forces of the natural world. These ideas are expressed through the musical traditions of various types of orchestras; dramatic performances such as topeng, gambuh, wayang, rejang, and baris; the reading of poetry in four languages (Sanskrit, Balinese, Old, and Middle Javanese); the creation and dedication of offerings of flowers, fruit and rice; and the performance of rituals by priests and the community.

The water temple networks also come together to cope with water scarcity and the threats of disease and pests by allowing clusters of Subaks to manage irrigation schedules at the watershed scale, and to control pests by inducing synchronized fallow cycles that eradicate their habitat. Although each subak focuses on the management of its own rice terraces, a larger-scale solution to water allocation emerges from the temple network system which optimizes irrigation flows for all.

The Subak system is a central pillar of Balinese culture, as it weaves a sustainable system of community collaboration, resource protection, and harmony with the natural and spiritual realm all around the center of Balinese life, rice farming. Without this complex system people would lose their way in how to grow food together and share resources sustainably. This is why, despite Dutch colonization and the modern imposition of industrial agriculture, there has been strong protection of preserving the Subak system. Today, education plays a big part in the transition to ecological agriculture by teaching young generations the importance of preserving this unique, and irreplaceable system.

The Impact of Industrial Farming and the Green Revolution

Most of the rice cultivated in Bali has now turned to use industrial and chemical methods after a series of government programs that imposed Green Revolution techniques and hybrid seeds. Due to the Indonesian government, mirroring most governments around the world, actively supporting agribusiness for decades, the shift to go back towards organic agriculture is, therefore, today very slow. **The effect of this transition to industrial agriculture has had several compounding, detrimental consequences, such as the deadpanning of soils, loss of nutrients and organic matter in soils, stunted rice crop growth from imported hybrid seeds leading to crop failure and livelihood loss for farmers, water shortages, biodiversity loss, nutrition loss due to low-quality rice, or farmer's crop being sold off to middlemen and processed food being bought instead.**

Perhaps more deeply, the imposition of the Green Revolution model has erased the identities of local communities through the destruction of previous community reproduction through traditional rice cultivation. Now, due to the loss of rice varieties, farmers don't know about local varieties of rice and that farming can be done effectively with little external chemical input. Instead, farmers are now used to buying chemical inputs and hybrid seeds, which are sold at a lower price in the market (50% less) than organic rice. This has had the flow-on effect of young people not knowing what kind of rice is native to Bali, where to get native seed, or how to cultivate it traditionally.

Now, although Indonesia is the third-largest rice producer in the world, a large portion of rice is imported from the Philippines and Vietnam. Hybrid rice has also been noted, by local community members, to taste different from traditional organic rice, ferment or spoil faster, and be of overall lower nutritional quality than organic, or traditional varieties of rice. Farmers are also selling their crop and using the money to buy low-quality rice and

junk food, instead of directly eating the rice they grow. There have also been several cases of rice being bleached to whiten it when stored in large warehouses after import, creating a toxic foodstuff. Albeit local complaints, no action was taken to stop this.

The Water Crisis and Current Threats to the Subak System

Today the Subak systems are threatened due to developments in the last decades, such as the rapidly increasing use of land and water resources for non-agricultural purposes due to increased human settlement and tourism, as well as the imposition of the Green Revolution chemical agriculture starting in the 1970s.

After over fifty years of imposed hybrid rice varieties which require high levels of chemical inputs of pesticides and fertilizers, soils have lost life, and their ability to hold water. Farmers describe that if they dig down into their fields, subsoils have become dry and hardened. This has caused some lands to no longer be productive anymore as water can no longer be absorbed into the soil and instead runs off or evaporates faster. Water still used in modern chemical agriculture has also been contaminated by agrochemicals, making its way into water canals as runoff and contaminating entire water systems. As industrial agriculture has spread throughout Indonesia, this phenomenon is being felt throughout the country, not just in Bali.

At the same time as the expansion of industrial agriculture, Bali witnessed an expansion of a mega-tourism sector which saw an exceptional increase in water use, for both tourism services and construction (Source: World Rainforest Movement). As a result, less water is available for rice cultivation, and lack of sanitation regulation caused further contamination of water in canals. Due to construction, subak canals have also been cut off due to road and infrastructure expansion. The networks of canals weren't protected until after 2012.

Since about 2004, according to Kadek, about 1ha of land that could grow rice has been lost each year due to lack of water. This equals up to 3000kg of rice/year lost. This is what has happened to his family's land– because of lack of water, rice cultivation is no longer possible on his land. Although there might be enough water during the rainy season, during the dry season when farmers depend most on the subak, less and less water is available.

> *During Kadek's grandfather's time, Kadek recounts, water used to be regular with water coming from the subaks 3 days a week, each day from a different Subak. Today Kadek's field no longer receives sufficient irrigation for chemical rice cultivation. This is what promoted Kadek to explore agroecological and traditional methods of cultivation, creating the Ancut Garden– now the central space of the Emas Hitam Indonesia (NGO) organization.*

On the other hand, sustainable ways of farming allow water to stay longer in the soil, increasing life and carbon capture, preventing erosion and faster evaporation. Not using chemicals also prevents contamination and kills biodiversity. Therefore, sustainable farming and local seeds are essential to solve the water crisis: cultivated land retains water while degraded land cannot. Naturally cultivated soil improves in time as well as local seeds, together they support an ever-evolving ecosystem.

SRI (System of Rice Intensification):

Today, in order to combat water shortages, climate change, and the effects of industrial agriculture, the SRI system is being used as a way to regenerate the soil while increasing organic rice productivity. The SRI takes inspiration from the way rice was grown originally, before the Green Revolution. There are many different types of SRI, but all forms are generally based on protecting and regenerating the soils, using less water, fewer inputs, and 50% less seed. The Green Revolution destroyed the equilibrium of natural systems because it prioritized quantity over quality, planting massive quantities of rice with equally massive quantities of chemicals to compensate for the lack of natural equilibrium. SRI does the opposite. It also provides an opportunity to farmers who can no longer grow rice due to lack of water for flooding paddy fields, to be able to grow rice without flooding. SRI systems also increase yields while reducing production costs to almost zero if local native seed and internal inputs are used, and protect from stressors, disease, and pests.

SRI techniques:

• Young seedlings for transplants by SRI must be less than 14 days after seeding to ensure potential of plant intensification.

• Preparation of planting sizes: transplants must be in a square pattern with a distance of at least 25 x 25 cm between rows and hills to give wider spacing to avoid plant competition for resources.

• Aerobic soil conditions: using nursery seedlings is the single most important contributor to higher SRI results, but the second most important is to keep rice soil moist but not constantly saturated. This strengthens the root system. The use of organic matter preserves water in the soil, and avoids its contamination by agrotoxins.

• Active soil aeration: soils that do not flood are conducive to passive soil aeration, allowing biological processes to improve soil structure and function.

The practice of SRI produces better results insofar as the soil is well supplied with organic matter.

(Source: Tri Hita Karana Bali, 2017)

What's the future for food systems and rice cultivation in Bali?

Emas Hitam Indonesia

Emas Hitam Indonesia (NGO) (EHI) started in December 2015 as a grassroots permaculture organization who has shared with farmers from all around Bali and Indonesia that there is an alternative to the system as they know it. They remind farmers that farming shouldn't have to be expensive by promoting regenerative solutions that, in reality, have always been present in their traditional farming systems, but have since been forgotten due to the implementation of the Green Revolution.

EHI's mission is to show families that they can grow the same amount of food, more healthily without the use of expensive chemicals. As a grassroots organization, EHI believes that change happens from the bottom up and not from the top down. This is reflected in their approach to training and education, which they believe should not be prescriptive but respectful of others' inherent knowledge. When interacting with local farmers, Emas Hitam Indonesia (NGO) first finds out what knowledge they already have of their land, their crops, or anything else relevant to their situation and their goals in transitioning to natural, organic farming. Once farmers teach EHI about their land and their challenges, the organization assists them in organizing their ideas by providing information and experiential knowledge. Emas Hitam Indonesia works collaboratively with the farmers, sharing their knowledge and experience horizontally, emphasizing their understanding that the farmer has their own, valuable experience. They, therefore, do not assume that teaching inherently puts them in a position of knowing more, **rendering their approach to food systems transformation a collaborative, horizontal practice of community building above all.**

At the heart of this approach lies a strong commitment to the principles of agroecology and permaculture. Through these methods, EHI focuses on the reconciliation of farmers with their ancestral knowledge, their local seeds, land, and community to inspire the reuptake of knowledge, culture, and community ties based on mutual assistance and diversity in Bali. In their view, the Balinese ancestors had already established a reliable system of community around food and agriculture. In the process of forgetting imposed by the Green Revolution, the next step is now coming back into contact with this ancestral system from the place of our current moment and working with farmers to remind them of the ancestral knowledge they already know. This usually results in farmers easily identifying techniques taught to them by EHI, as many still hold memories of witnessing parents, or grandparents practicing these techniques. Using traditional seeds and traditional cultivation methods, therefore, does not mean going backward in time but instead stepping back on a path of knowledge that had been interrupted due to violent, external impositions.

Bringing communities back to their ancestral practices as a revival, hence also revives tradition, memory, and identity.

Gotong Royong in Farming Communities

Gotong Royong means something close to "mutual assistance" in Indonesian and it entails the obligation of the individual towards the community. The idea behind Gotong Royong is that hard work can be made easier if members of a community share the burden between themselves. Gotong Royong manifests in many forms, such as communal work to clean the environment in the neighborhood, building houses, helping on the fields, and fixing irrigation. It, therefore, serves as a basis for the creation of trust and meaningful relationships between people who work together and enhance solidarity in their respective communities. More concretely, it is meant to teach people to be less selfish and think about rights and responsibilities beyond the individual but as part of a larger community.

The Gotong Royong philosophy has always been central to society in Bali, however, it was gradually lost as life on the island changed after the 1970s and people started doing things differently. Through their work, Emas Hitam Indonesia (NGO) is trying to re-embed Bali in the Gotong Royong philosophy and show farmers that they can achieve more by working together as a community.

Reference:

Bowen, J. (1986). On the Political Construction of Tradition: Gotong Royong in Indonesia. *The Journal of Asian Studies, 45*(3), 545-561. doi:10.2307/2056530

Mari Berkebun Next- The Building of a New Rice Communities

Since the beginning of the Coronavirus Pandemic, many farmers have either started to return back to their land due to unemployment in the cities or have reached a point where they can no longer afford expensive hybrid seeds and chemical inputs. Due to these circumstances, many farmers have begun to look for ways to farm without external inputs, reaching out to Emas Hitam Indonesia for help in how to achieve this transition.

Previously, most of the farmers who approached EHI grew vegetables for market gardens or for wholesale. But with the crisis brought on by the pandemic, rice farmers began to become more interested in ways to decrease input costs while turning organic. So, earlier this year, the Subak Telaga leader from Mas Village, Ubud, approached EHI because, as a result of the pandemic, the farmers could not afford to buy seeds or chemicals anymore so they were looking for an option. This was a significant and risky shift, as rice farmers potentially have much more to lose in the transition towards organic farming, as the risk of losing or diminishing their crop during the process of transition would mean losing their family's livelihoods as most farmers do not consume their own crop, making the families income one hundred percent dependent on the sale of rice harvests. These factors had previously made rice farmers much more hesitant to transition.

But what he said was music to their ears, as the Subak leader of this community had opened the door to be able to remind these rice farmers how their ancestors used to do it: with natural resources and heritage seeds. The community was made up of thirteen farmers cultivating around 4.5 hectares of Balinese rice fields.

In June 2021, the farmers involved in the “Mari Berkebun Next” program in Subak Telaga, Desa Mas started planting the rice to be grown without the use of chemicals, bringing back life and health to their soil, bodies, and community. Among the varieties used was the local variety of rice named MSP - Mari Sejahterakan Petani (Let’s bring prosperity to our farmers), a native variety that had evolved from farmer to farmer for a long time. These seeds come from another sustainable project in Subak Kedisan that had been successful in growing organic rice. In July 2021 the “Kelompok Tani Padi Mas dari Subak Telaga” community of farmers was established, and in September 2021 it was registered as a natural rice farming community and recognized by the government. By the end of October 2021, the community had its first successful harvest.

The first objective of the collaboration was to encourage farmers to keep most of this harvest for themselves in order to ensure food sovereignty for the farmer families, and, only then, redistribute the surplus, as it is highly nutritious heritage rice grown in healthy soil. The "Mari Berkebun Next" mentoring program's approach is "From A to Z", which means Emas Hitam Indonesia (NGO) also facilitates a customized market for them to sell this rice in the hope that the farmers realize that there are people ready to purchase highly nutritious heritage rice grown by local communities of farmers.

Techniques used during the training with farmers in their transition to chemical-free, agroecological natural farming included, the introduction of the System of Rice Intensification (SRI) Technique, the use of natural fertilizers derived from the farmers land, the use of heritage Balinese seed, how to work together applying Balinese Gotong Royong system of mutual assistance, the differences between the two systems of cultivation (conventional and agroecological) and how to build and maintain healthy soils.

Kelompok tani
PADI MAS
DESA ADAT MAS

The Objectives of the Mari Berkebun Next Program with the Padi Mas from Subak Telaga:

- Regenerate Balinese land and conserve Balinese rice fields.
- Reduce Balinese rice farmers' dependency on cultivation with chemicals and GMO seeds.
- Reconcile Balinese farmers with their ancestral knowledge and traditions.
- Introduce agroecology as a solution to regenerate and improve Balinese families' livelihoods.
- Introduce SRI (System of rice intensification) technique to farmers.
- Introduce the use of natural fertilizers and local seeds.

Total Area of chemical-free cultivation	4.5 hectares
Estimated harvest per are	50/55 kilograms
Basic cost for rice production	IDR 10.000/kilogram
Estimated total harvest	23,887 kilograms
Estimated consumption per farmer for 5 months	250 kilograms
Estimated total rice consumption for the entire community (13 farmers x 250 kilograms)	3,250 kilograms
Rice for sale (Total harvest 23,887 kg - Total consumption 3,250 kg)	20,637 kg

Photos: Emas Hitam Indonesia (NGO)

Contact:

Navdanya International

info@navdanyainternational.org

www.navdanyainternational.org

Emas Hitam Indonesia NGO

emas.hitam.indonesia@gmail.com

www.facebook.com/EmasHitamIndonesia