

CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



Basey Association for Native Industry Growth Inc. (BANIG)

- Southwestern Samar, Philippines
- Mat weaving
- facebook.com/BANIG.weavers
- Analysis period: 2014-2023

Weaving Skills Revitalized for Sustainable Tikog Products

Business Spotlight

While initially responding to the challenge of survival, the banig, or mat-making, industry of the Basey Association for Native Industry Growth Inc. (BANIG) in Basey, Samar, today banig-making is an agroecological model that mirrors circular economy (CE) practices at each of the consecutive stages of its production, from chemical-free planting/natural growing of the raw materials (tikog grass, *Pagtatanim*) to resource-efficient pre-processing (*Paghahanda*) and solar drying of the tikog fibre, to the final design and weaving of the mats (*Paglalala*) based on traditional patterns. Improved soil quality and agro-ecological farming practices have helped to increase harvesting frequency from 6–8 months to 2–3 months, which has increased farmers' incomes while also making notable improvements in the quality of the tikog fibre possible. Scraps in banig/mat-making are also used to make new products like slippers, bags and keychains designed by association members, mostly women, who were themselves trained in sustainable design and who follow product standards in line with international best practices. Those involved in the production of tikog banig are now able to earn a living wage,

and can charge more for their labour, with earnings at par with the minimum daily wage of workers in the region. Thus, traditional farming and weaving practices combined with traditional designs have been harnessed to ensure a sustainably managed agro-ecosystem today, and promote sustainable community livelihoods, while keeping the local culture alive. However, expanding market demand for their products continues to present challenges, but the group continues to bank on support from its partners and on sustainability-minded institutional buyers and patrons.

Keywords

Circular economy, Agroecology, Mat weaving, Tikog farming

Innovation

Product innovation, Production, Resource efficiency and Resource substitution

Context and baseline

BANIG is registered as an association in the small rural town of Basey, southwestern Samar, with ~ Php 750,000 (~ USD 13,400) in capital assets. It has roughly 1000 members, 99% of whom are women weavers (*naglalala*) from 23 *barangays* (neighbourhoods) who have long been using tikog, an indigenous grass, to make *banig* (mats) for their own homes and to sell for their livelihood. Formerly they bought tikog wherever it was available, sometimes procuring from nearby Leyte province when local supply was low.

The supply of tikog dwindled over time as the result of soil contamination from chemical pesticides used in nearby rice fields. Then in 2014, tikog stocks were almost completely wiped out by Super Typhoon Yolanda (international name Haiyan), one of the strongest tropical storms ever recorded. The community realised that they needed to find a more sustainable way to preserve the tikog industry, and they formed a social enterprise that partnered with government, non-government and international organisations, such as the National Rural Women's Coalition (Pambansang Koalisyon ng Kababaihan sa Kanayunan/PKKK), CARE Philippines, the Office of the Governor of Samar, the Department of Science and Technology, and the Department of Trade and Industry.

With further assistance from the International Labour Organization, the UK government and the Technical Education and Skills Development Authority, among others, BANIG transformed into its present structure as a federation of twenty women-dominated associations with over 1000 active members as of 2023 (compared to fewer than 200 members prior to the 2013 typhoon), skilled in tikog planting and processing, weaving, embroidery, and sewing. According to the president of BANIG, the Philippine Fibre Industry Development Authority (PhilFIDA) has also pledged to provide funding for the construction of a building in 2024 to serve as a processing hub and training centre. Thus it can be asserted that BANIG and its members have truly transitioned from survival mode into a flourishing entrepreneurial organisation.

Innovation

After the Yolanda/Haiyan typhoon disaster, the local government began developing the land for cultivating tikog to address the depleting supply problem. BANIG members themselves realised that if they were to rebuild their tikog industry, it would be more prudent for them to plant their own tikog to reduce

their expenses, and to restore the quality of the soil where the grass could be properly propagated. In keeping with the principles of agroecological farming, they shifted to sustainable land clearing and preparation processes along with planting and harvesting practices, such as by individually pulling the tikog stalks instead of cutting them, even though this lengthens the harvesting time (*'isa-isang hinihila ang tikog imbes na diretsong pagtabas kahit mas matagal ang proseso'*). Not only have pests been virtually eliminated (although aphids do sometimes appear, in very negligible numbers), but the quality of the tikog fibre has also been improved.

Tikog farming by BANIG members thus illustrates an agroecological model that mirrors CE practices at several stages – i.e. natural planting and growing of the raw materials, resource-efficient pre-processing, sustainable harvesting and solar drying. The association has been able to maximise local ecological practice and knowledge through participatory approaches which have included the farmers in the innovation process.

After tikog fibres have been prepared, they are coloured with natural dyes and woven into mats with traditional designs (referred to in the vernacular as *panyolito*, *bukid*, *rikrak*, and *karay karay* among others). It may take up to two weeks to make a standard mat, and longer for mats with intricate designs. During peak production cycles, which now run approximately every two months after harvest, weavers work for 10–14 hours per day, usually from their homes so that they are also able to attend to their family and household tasks. Any scraps generated in banig making are repurposed into new products which are all carefully designed to maximise the use of resource materials and minimise waste scraps, thus contributing to efficiency and circularity. These products include bags, purses, wall decorations, and home and fashion accessories. BANIG members undergo training specifically for these products with the goal of achieving zero waste. This is incorporated in banig-making product standards and best practices which were established with the help of the Skills for Prosperity Programme in the Philippines (SfP-Philippines), implemented during 2019–2023 by the International Labour Organization (ILO) and funded by the Government of the United Kingdom.

Circular Economy impact

The innovations developed and implemented by BANIG members contribute to key circular economy strategies of efficient and circular use of natural resources and substitution by renewable resources.

Overall, the CE effects have been the most profoundly felt in the efficient use of resources, including land, water and harvested tikog grass.

- The growth and harvest cycle has been reduced by at least half, allowing increased and more efficient production from the same inputs in land area and rain water. The sustainable clearing of land and how it is prepared have greatly improved soil quality. By delineating specific planting areas for tikog at a distance from other farmed rice lands which may be using synthetic industrial fertilisers and pesticides, water quality has also been better monitored. Naturally grown tikog itself does not require the use of any fertiliser, and is more dependent on the availability of good-quality water.
- Efficiency of use of tikog in mat-weaving is improved with the Shared Service Facility set up with support from DTI. The Facility is also providing training on different weaving and dyeing techniques that introduce various mat patterns that both weavers and embroiderers can incorporate into their craft. The solar dryer improves efficiency relative to the traditional practice of natural drying in streets/fields, with lower material losses. The Facility is supporting design and cutting techniques to minimise scraps from the mat-making process; scraps are estimated at less than 10%, with continuing development efforts aiming to reduce this amount even further. The facility has three high-speed sewing machines, a long flattening machine, and an edger machine that helps the group maintain the weave quality. As the results show, the Tikog banig industry has been able to improve in terms of quality and efficiency.

In parallel, all of these innovations have contributed to the circular use of natural resources, for example by using waste/short length tikog for alternative products like purses, slippers, etc., instead of being disposed of as waste as was done before. Moreover, the use of natural rather than chemical dyestuffs is an example of resource substitution instead of using a non-renewable resource.

Business and market impact

Harvesting frequency has increased from every 6–8 months to every 2–3 months, which has increased farmers' incomes and notably improved the quality of the tikog fibre. Preparation of the tikog fibre has become more efficient with the use of a solar dryer (donated by the Department of Trade and Industry/DTI), and with a flattening (*pagpirat o pagpatag*) machine co-designed and co-created with the Department of Science and Technology (DOST).

Although no specific economic data were cited, the president of BANIG has indicated that the tikog industry is booming, orders have rebounded, and access to resources is no longer a critical issue. Those involved in the production of tikog banig are able to earn a fair wage and can charge more for their labour, thus allowing them to improve their standard of living. Due to the efficiency of their process and the uniqueness and high quality of the products, the price of tikog mats, for example, can now be set at more than twice their original price (Php 360–500 (~ EUR 6–8) per mat, compared to the previous price of Php 180 (~ EUR 3). A handbag produced by BANIG currently fetches 2500 pesos (~ EUR 42) or more on the market, depending on the size, embroidery and design, compared to the previous price of Php 500 (~ EUR 8).

More importantly, the earnings return directly to the farmers and weavers since the association is now able to manage its own operations and sales without the need for middlepersons. The president of BANIG revealed that individual member incomes, especially those of the women weavers, have increased, and that many of them have been able to build or improve their homes. A mat weaver now earns Php 300 (~ EUR 5) per day, which is on a par with the minimum daily wage in the region ranging from Php 295 to Php 320 (2022, for the agricultural sector).¹

Stakeholders

BANIG participated in the development of the Tikog Banig Industry Development Plan, spearheaded by the DTI² to address issues such as raw material sourcing, production efficiency, market matching, and the preservation of the culture of tikog banig weaving. Part of this plan included the establishment of a Shared Service Facility.

The provincial government and the Samar provincial tourism office provided technical assistance, financial and marketing assistance, and opportunities for BANIG to participate in product trade fairs. Collaboration with the high-end brand LARA, which was established by the provincial government, afforded the association exposure to a wider market. In 2017, BANIG was awarded the title of 'Most Promising Retailer' by the Zonta Philippines, an organisation of women executives and professionals committed to advancing the status of women.³ They also won the People's Choice Award and Best Product Award at the Manila FAME design trade show, the premier design and lifestyle sourcing event for exceptionally handcrafted products from furniture and furnishings to home decoration and fashion.

1 <https://wageindicator.org/salary/minimum-wage/minimum-wages-news/2022/minimum-wage-increased-in-viii-eastern-visayas-philippines-from-27-june-2022-july-20-2022>

2 https://www.dti.gov.ph/zero-to-hero/zth_bayanigosyante/zth-q/quintessential-creations/

3 https://issuu.com/banig.weavers/docs/banig_catalog?fbclid=IwAR2__s_3MjPsZhdYs36kplCdy1IhbN5SpSif7I-FIIUzyAeC1pNyn03A74M

Implementation

Although BANIG members have received basic training on running a business, there is still limited knowledge on fair trade pricing which would take into account not only the cost of materials but also the full cost of labour. Thus value creation needs further analysis, as it may affect the sustainability of the organisation. While their products have received orders from as far away as Canada and Australia, market expansion remains a continuing challenge. The association aims to target additional institutional buyers to ensure a steady demand for its products.

There are also concerns for encouraging the interest of the local youth to learn and practice the craft of tikog mat-making, and BANIG has successfully lobbied the Department of Education to include it in the curriculum of local schools by training the local teachers and requiring students to complete a woven tikog product as a certification requirement. This initiative has met with some resistance by those who argue that they want to complete their education so that they do not have to become weavers.

BANIG members and the community in general also need assistance to build their social safety nets to cope with unavoidable natural calamities and disasters to prevent these from wiping out communities and livelihoods, as happened in the past. They recognise the need to build their capacity for disaster preparedness and risk reduction, and for contingency planning.

Takeaways

Ultimately, the experience of BANIG illustrates three lessons learnt, namely how:

- crisis can be the driving force to create momentum for positive change,
- redevelopment of the sector is critically dependent on knowledge partnerships and the co-creation of locally appropriate solutions and new locally rooted products, and
- artisans can be empowered by forming a cooperative to collectively adopt an agroecology approach and to eliminate the need for intermediaries.



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