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WOMEN ARTISANS' ASSOCIATION OF ARBOLSOL AND HUACA DE BARRO

Peru

Equator Prize Winner

Equator Initiative Case Studies

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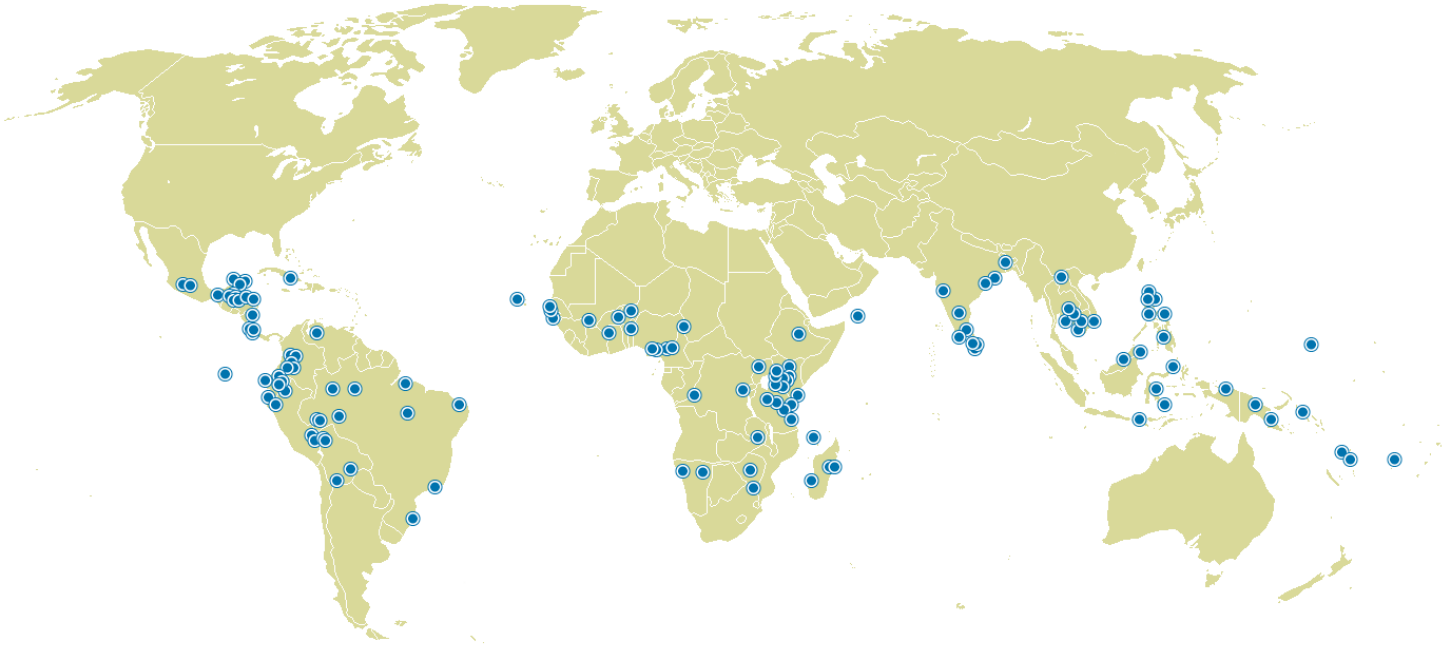
UNDP EQUATOR INITIATIVE CASE STUDY SERIES

Local and indigenous communities across the world are advancing innovative sustainable development solutions that work for people and for nature. Few publications or case studies tell the full story of how such initiatives evolve, the breadth of their impacts, or how they change over time. Fewer still have undertaken to tell these stories with community practitioners themselves guiding the narrative.

To mark its 10-year anniversary, the Equator Initiative aims to fill this gap. The following case study is one in a growing series that details the work of Equator Prize winners – vetted and peer-reviewed best practices in community-based environmental conservation and sustainable livelihoods. These cases are intended to inspire the policy dialogue needed to take local success to scale, to improve the global knowledge base on local environment and development solutions, and to serve as models for replication. Case studies are best viewed and understood with reference to '*The Power of Local Action: Lessons from 10 Years of the Equator Prize*', a compendium of lessons learned and policy guidance that draws from the case material.



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WOMEN ARTISANS' ASSOCIATION OF ARBOLSOL AND HUACA DE BARRO

Peru

PROJECT SUMMARY

Founded by local women in 2003, the Women Artisans' Association of Arbolsol and Huaca de Barro (*Asociación de Artesanas de Arbolsol y Huaca de Barro* – AAAHB) works to recover traditional methods of cotton production that are environmentally responsible and create positive socioeconomic change in Mórrope District, Lambayeque, northern Peru.

The association oversees planting and harvesting of native cotton varieties using only pesticides from natural sources. In addition, the association has been active in managing water resources in this semi-arid region. Traditional colours of native cotton have been recovered, water resources are cleaner as a result of better management, and organic cotton products are sold in local markets. The association has been at the forefront of a national movement in Peru to change perceptions of native cotton production.

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KEY FACTS

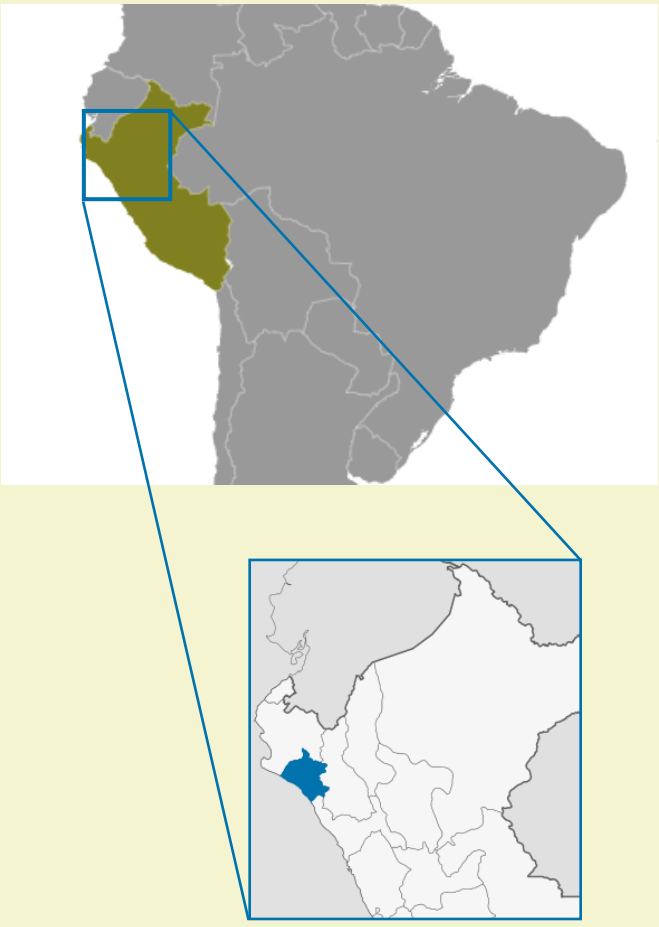
EQUATOR PRIZE WINNER: 2008

FOUNDED: 2003

LOCATION: Mórrope district, Lambayeque region, Peru

BENEFICIARIES: 35 families

BIODIVERSITY: Five native cotton species



Background and Context

The Mórrope District of Peru, located in the region of Lambayeque on the country's northern coastline, lies within an agro-ecosystem consisting of dry forests and arid plains irrigated by rivers flowing from the higher plains of the Andean foothills. In much of the arid region, irrigation is needed to support any farming. Over time, severe water shortages have led to an increase in soil salinity, resulting in soil degradation, erosion, and low crop yields. This has adversely impacted the district's local communities, who rely on small-scale agriculture as their main source of income. Cultivated crops include cotton, corn, beans, and various fruits.

Recovery of a culturally-important native crop variety

Cotton has played a particularly prominent role for local livelihoods, as both a high-value and culturally important cash crop. The native cotton species grown in Lambayeque (*Gossypium barbadense*) formed the basis of the pre-Inca northwest civilizations of the Moche and Chimú people. Many native cotton varieties were naturally pigmented. Dating back to the 1930s, however, the Peruvian government has attempted to eradicate these native varieties of cotton, fearing that they carried pests that could spread plagues to more commercially-valuable white cotton crops. These efforts were renewed in the 1970s, when farmers throughout Peru were ordered to cut and burn all native cotton species. These policies led to the near extinction of native cotton varieties. Without this cash crop, communities in Mórrope were left with fewer opportunities to diversify their sources of income, leaving many reliant on subsistence farming of fruits and vegetables. In turn, this led to high rates of migration to urban centres, especially for male community members, putting economic and emotional strains on rural households.

Established by local women in 2003, the Artisan Association of Arbolsol and Huaca de Barro of the Mórrope District (AAAHB) sought to confront these social and economic challenges by reviving traditional methods of cotton production in an environmentally responsible fashion. This entrepreneurial group of Mochica indigenous women used funding from the UNDP/GEF Small Grants Programme in 2005 to begin recovering and reintroducing native cotton varieties. This work has involved overseeing the planting and harvesting of native cotton varieties using natural pesticides and fertilizers, and sustainably managing local water resources. Traditional colours of native cotton have been recovered, water supplies have been improved (as a result of new irrigation systems), and organic cotton is produced for sale in local markets. After a successful first phase of operations, AAAHB's work was scaled up with a second SGP grant of US$50,000 in 2007. The group, which began as a women's organization, has now expanded to include the whole community.

Given the extent of the systematic efforts to eradicate native cotton varieties, locating and reintroducing native cotton seeds was a challenging proposition. Community members were enlisted to search for traditional cotton seeds wherever they might be found. Several community members recall resorting to such measures as cutting open cotton-filled pillows which predated eradication efforts. Seeds were classified and stored until, eventually, the organization had a critical mass to begin cultivation. On a small plot of land, initiative members planted five native cotton species and were provided with training on the processing of cotton fibres and the production of high-value handicrafts. AAAHB has since evolved into a robust and thriving organization, offering skills creation, income generation, capacity building, cultural preservation, biodiversity conservation and a holistic sustainable development solution for communities of the Mórrope District.

The organisation holds the long-term objectives of rehabilitating all traditional varieties and colours of native cotton, cultivating traditional cotton on ten hectares of land, establishing seed banks for cotton seedlings, and identifying new markets for the sale of handicrafts at fair prices. The initiative has become an example of community-based action for the district population, with few previous instances of communal organisation for development.

Key Activities and Innovations

The association's activities centre on the planting, harvesting, and processing of native cotton into value-added products. The association oversees and supervises the planting and harvesting of native cotton species using only natural pesticides and fertilizers. Association producers cultivate plots of land measuring between 100 and 500 square meters. With a yield of 12 quintals of cotton per hectare, each association member could expect to produce between 0.46 and 2.3 kilogrammes of cotton. Organic, native cotton is more resilient to water shortages and high salinity soil than other cotton varieties available on the market. As such, native cotton varieties draw a higher premium. Post-harvest, cotton fibre is spun and woven into waist looms, which are sold as crafts at a variety of local and regional markets, at the association's workshop, and to outside distributors. The business model is fully integrated through a credit system that loans local women the materials needed to make crafts and allows material costs to be repaid when revenues come in from the sale of finished craft products.

Native cotton cultivation and production activities place equal emphasis on poverty reduction and biodiversity conservation. Association members use only natural pesticides and fertilizers. This not only ensures the conservation and preservation of healthy ecosystems, but eliminates the sizable costs previously associated with chemical fertilizer inputs. Traditional ecological and cultural knowledge also inform and guide the farming and production techniques employed by association members. Traditional eco-agriculture practices include environmentally-friendly management of insect plagues and sustainable irrigation systems that prioritize the conservation and protection of local watersheds. The association has forged a partnership with the Regional Fund for Appropriate Technologies for the Sustainable Management of Natural Resources to improve irrigation and harvesting practices.

Once the cotton is harvested and collected, it is spun and woven by waist looms to gather the filament. This base cotton material is used to produce a variety of crafts, yarns and garments. Products are sold at local and regional markets, commercial and trade fairs, to national and international distributors and through an association workshop. Trade fairs have been particularly fruitful forums; in addition to providing a platform to sell their products, the association has made invaluable connections with other cotton manufacturers, suppliers and those with knowledge of the wider cotton industry. The cotton product incomes of association members are further bolstered and supplemented by the sale of organic fertilizers.

Impacts

BIODIVERSITY IMPACTS

The Lambayeque region is characterised by equatorial dry forests, part of an ecosystem that winds along the Ecuadorian and Peruvian coastlines. Beginning at Ecuador's Santa Elena peninsula, Gulf of Guayaquil, and Puna Island, this eco-region extends south through large parts of Tumbes, Piura, Lambayeque, La Libertad, and as far as the western catchment of the Peruvian Andes to the valley of Marañón between Cajamarca and Amazonas.

This eco-region presents unique ecological challenges for the farmers of the Lambayeque region, most notably in the form of chronic water shortages. By supporting the reintroduction of native varieties of cotton, as well as a range of traditional eco-agriculture practices, the association has improved the resilience and adaptive capacity of local communities in the region. Five natural colours of the native cotton species *Gossypium barbadense* have been recovered from the brink of eradication. These cotton varieties have been cultivated and shared with villages across Mórrope. Native cotton (known locally as algodón pais) offers a number of advantages over competing hybrids, which are often unable to survive particularly dry years or seasons. Cotton scientists and local farmers agree that native plants are more resistant to the over 250 pests and organisms known to attack cotton plants. Commercial cotton hybrids are more likely to require chemical fertilizer and insecticide inputs, which pollute and damage local ecosystems. By championing genetic diversity and the evolved adaptive capacity of native cotton varieties over the use of chemical fertilizers, the association has improved entomological diversity and reduced pesticide contamination of fresh water sources. Where fertilizers are used, the association promotes organic inputs, reducing negative impacts on agriculture, ground water and local wildlife.

Native cotton offers other important advantages to local farmers, including limited maintenance needs after sowing and no pesticides during its long vegetative cycle. It develops into large bushes that produce cotton fibre year round (after the first year) for up to six years. Native varieties yield high-grade fibre and in greater quantities than commercial hybrid varieties. Native cotton can be grown in arid soils, where high levels of salinity and boron toxicity will support virtually no other crops. Algodón pais is also grown by farmers to form tough hedgerows to protect field crops from foraging animals, thereby reducing human-wildlife conflict.

SOCIOECONOMIC IMPACTS

The association's primary aim is the reintroduction of native cotton varieties as a viable livelihood option for local women. An integral part of actualizing this objective has been training and capacity building in traditional weaving techniques, providing local farmers with value-added secondary processing for the raw cotton crop. Artisans connected with the association have been responsible for reviving the use of indigenous weaving techniques which use a back-strap loom. From planting to processing, the association model prioritizes local and traditional knowledge and is providing its members with a high degree of ownership over income generation activities. Local women have been empowered to grow cotton in their fields and to teach their daughters how to effectively integrate old and new weaving techniques.

Through the sale of native cotton products, the 35 families currently engaged in the project are increasing their household incomes and diversifying their livelihoods. Native cotton has several useful properties which make it valuable in the industrial textile market. The generally long and comparatively thick fibres of native cotton varieties are ideal for soft spun yarns which are used in the production of knitted socks and undergarments. The range of natural colours being cultivated by the association is found nowhere else in the world, representing a valuable commodity for speciality fibre and artisan markets. Along with the sale of processed cotton handicrafts, local producers generate income from the sale of cotton yarn and organic fertilizers. Combined revenues are frequently reinvested into community development projects such as water wells, crop diversifica-

tion programs, animal husbandry training, and more. Product diversification has helped mitigate environmental and social risk, expand revenue streams, and enhance food security.

Through a partnership with the Regional Fund for Appropriate Technologies for the Sustainable Management of Natural Resources, the association has also improved local irrigation systems, increased average local agricultural productivity, and improved the quality of and access to potable water. Previously, the vast majority of local community members accessed water through pit wells which were exposed to contamination, susceptible to frequent collapse, and unpredictable in their water supply. The association has fostered a number of partnerships to improve the quality and supply of fresh water to the local population.

Capacity building has been another priority for the association. Workshops and trainings are regularly held on the cultivation and management of native cotton, product design, micro-enterprise management, quality control measures, and a range of value-added secondary processing options. The impacts of capacity building have been far-reaching, as skills employed in the cultivation, production, marketing and sale of cotton products have been applied to the wider agriculture sector. Local producers have also been trained in the introduction of worms for composting and the use of non-productive seeds for sheep and goat feed.

POLICY IMPACTS

The eradication of Peru's native cotton species was an agricultural policy put in place to protect commercial cotton from plagues. The policy aimed to create a healthy and sustainable cotton industry that would generate economic benefits. It overlooked, however, the negative effects this would have on the livelihoods and income-generation options of the country's rural poor, particularly in regions such as Lambayeque where traditional cotton represents one of few viable cash crops. It also neglected the important cultural and traditional value of the algodón pais crop. These mistakes could have been identified and avoided through greater stakeholder participation in policymaking processes; the case serves as a cautionary example of how top-down policymaking which excludes the perspectives and needs of resource users can further marginalize an already economically disadvantaged segment of the population. The end result has been reduced economic and environmental resilience, less self-sufficiency for rural communities, and degradation of the genetic and biological diversity that allow communities to adapt to changing climates and conditions. The association has been at the forefront of a national movement in Peru to change perceptions of native cotton production. In collaboration with the Native Cotton Project, the association works to change prevailing assumptions about the viability of native cotton production, and to promote it as an environmentally friendly and responsible business enterprise. They have successfully garnered attention from regional and national authorities, and advanced recognition of traditional cotton as an important, value-added product for rural family livelihoods. Advocacy efforts have been bolstered by increased petroleum prices in recent years, which have in turn raised the transaction costs of producing and/or importing synthetic fibres, as well as hybrid cotton cultivation which relies heavily on petrochemical pesticide and fertilizer inputs.

Three years after the association began, and owing in no small part to the association's advocacy efforts, native cotton was declared a part of Peru's national heritage. Since that time, with the endorsement of regional government agencies, native cotton production has experienced resurgence. Importantly, the ban on native cotton production was lifted in the northeast coastal regions of the country. Under the auspices of the Peruvian Ministry of Industry, Tourism, Integration, and International Commerce and the Institute of Latin American Studies of the University of Texas, experimental research is being conducted to assess the feasibility of extending native cotton cultivation to similar arid zones.

"Countries should establish mechanisms that permit the conservation and optimal use of resources while taking into account the local populations that depend on these resources. Policy-makers would be well-served to support, respect, and listen to local and indigenous communities. We are holders of traditional knowledge and resource management systems which have, over time, conserved biodiversity and ecosystems."

Magdalena Puican Chinguel, AAAHB

Sustainability and Replication

SUSTAINABILITY

The sustainability of the project depends on the ability of the member producers to continue generating income from the sale of cotton yarn, finished cotton handicrafts, and organic fertilizer. While the project has a significant level of social support from artisan producer households, native cotton production will need to deliver a sustained source of income to remain a viable livelihood activity. To this end, market access is a critical success variable, with access to new markets an important determinant of long-term sustainability. The association also recognizes the danger of overdependence on one industry, and retains an interest in exploring alternative income-generating activities. The substantial capacity-building activities of the association have laid the foundation of social capital that will enable further collective action and the development of alternative projects. Training in microenterprise management and product design offer a platform on which to expand income diversification activities. The association is in the process of identifying external sources of finance to pilot new projects. Support from the GEF/UNDP-Small Grants Programme (SGP) was essential in providing seed funding to launch the association. The association received grants in 2004-05, 2005-06, and 2007-09 totalling USD 93,000. This funding has been essential to the association's work, but does not represent a sustainable source of financing.

REPLICATION

While the ban on native cotton production has been lifted in the northeast coastal regions of Peru, the ban remains in place in other regions of the country, which has limited the extent to which replication of the association model has been possible. The project has, however, been duplicated in several villages within Mórrope District. Beyond Mórrope, initial attempts to replicate the project have been made in four districts. Further, three artisan members of the association are currently under contract by a number of organizations to provide training in native cotton cultivation and crafts production to other communities in the region. The association also provides an example of successful technology and knowledge transfer. After association members attend formal technical workshops in urban centres, the skills acquired are disseminated through peer-to-peer knowledge exchanges facilitated by the association.

PARTNERS

GEF/UNDP-Small Grants Programme (SGP) has provided finance, monitoring, and technical advice in three grants to date.

Fondo Regional de Tecnologías Apropiadas en Manejo Sostenible de Recursos Naturales (FOMRENA) has provided funding and monitoring for purchases of weaving equipment, as well as supporting the improvement of water systems, benefitting more than 80 families.

Asociacion Peruana de Pequenos Productores Ecologicos (APEPRO-ECO) has assisted the association in establishing channels for marketing and selling their products in its capacity as an advisory body for eco-friendly micro-enterprises.

Servicio Nacional de Sanidad Agraria (SENASA**)** played a critical role in the development of native cotton production by providing technical advice to the association's members on effectively preventing the spread of plagues from native varieties to other commercial cotton crops. Without this technical support, the association's efforts would have been deemed illegal under the ban on native cotton. SENASA has also supported the development of seven distributors for native cotton.

Grupo de Iniciativas de Economía Solidaria - Lambayeque (GIES), a branch of the nationwide group for economic solidarity initiatives, has helped to organise commercial trade fairs, enabling association farmers to market their products and exchange knowledge with other local producers. GIES also established three cotton distributors.

Various government agencies have played a role in supporting the association's work. The government of the Municipality of Mórrope District aided the initiative in gaining recognition through invitation to district-level trade fairs. The Irrigation Commission played a role in including association plots within the overall irrigation programme. The Ministry of Industry and Tourism has also invited the initiatives to trade fairs, and has exhibited their products for sale in a local tourism centre.

"The community (and above all the artisans) feel the negative effects of climate change. Rain scarcity and a general lack of water for cultivation worsen each month. In response, artisans have initiated the reforestation of their modest tracts of land with timber and fruit species, improved their stoves to improve the efficiency of wood use, and contributed to the rehabilitation of soil by incorporating organic materials (composting). The rehabilitation of soils and the planting of native cotton species provide an alternative to commercial cotton, which requires large amount of water and use of pesticides."

Magdalena Puican Chinguel, AAAHB

FURTHER REFERENCE

- Artisan Association of Arbolsol and Huaca de Barro Photo Story (Vimeo) http://vimeo.com/15959918
- Artisan Association of Arbolsol and Huaca de Barro MDG Poster (PDF) www.cbd.int/database/attachment/?id=1042

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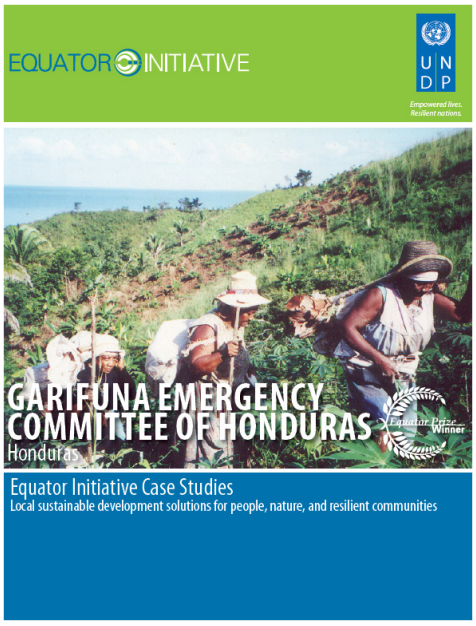

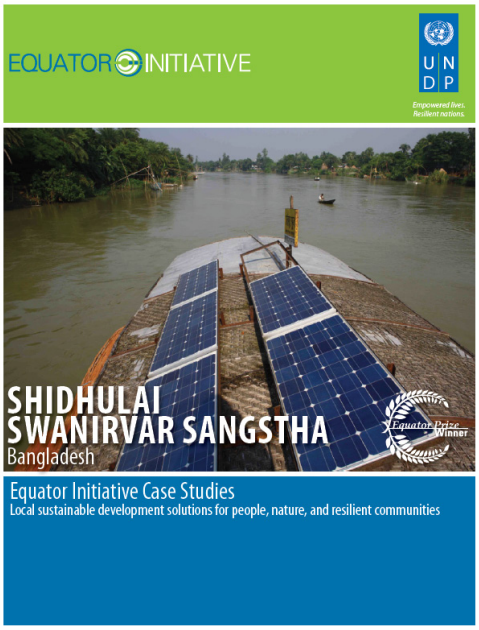

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