Equator Initiative Case Studies
Local sustainable development solutions for people, nature, and resilient communities

WANANG CONSERVATION AREA
Papua New Guinea

Empowered lives. Resilient nations.
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. The Equator Initiative aims to fill that gap.

The Equator Initiative, supported by generous funding from the Government of Norway, awarded the Equator Prize 2015 to 21 outstanding local community and indigenous peoples initiatives to reduce poverty, protect nature, and strengthen resilience in the face of climate change. Selected from 1,461 nominations from across 126 countries, the winners were recognized for their achievements at a prize ceremony held in conjunction with the United Nations Convention on Climate Change (COP21) in Paris. Special emphasis was placed on the protection, restoration, and sustainable management of forests; securing and protecting rights to communal lands, territories, and natural resources; community-based adaptation to climate change; and activism for environmental justice. The following case study is one in a growing series that describes vetted and peer-reviewed best practices 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.
**PROJECT SUMMARY**

Wanang Conservation Area is an alliance of ten indigenous, rainforest-dwelling clans that together protect 10,000 hectares of forest for biodiversity research, carbon storage, and sustainable livelihoods. Developed as a model of resistance to commercial logging interests in a region being ravaged by deforestation, the initiative protects more than 280,000 trees and studies their responses to changing climatic conditions. A research station, which is one of the largest in the country, serves as a capacity-building hub and trains Wanang villagers and students as para-ecologists and research technicians, providing a source of livelihoods and supporting environmental learning. The initiative has become a model for community-driven conservation and development in the country and is a powerful example of partnership between a self-governed community, local NGOs, government, businesses, and research institutes. Forest conservation has become the cornerstone of the local economy, with partnerships creating greater access to health, education, and food security.

**KEY FACTS**

**Equator Prize Winner**
2015

**Founded**
2000

**Location**
Wanang village, Middle Ramu River basin of Madang Province

**Beneficiaries**
The Wanang community, made up of approximately 300 people organized in ten tribes

**Areas of focus**
Protection, restoration and sustainable management of forests; protecting and securing rights to communal lands, territories and natural resources; innovative partnerships with government or the private sector to promote sustainable development

**Sustainable Development Goals addressed**

1. **No Poverty**
2. **Zero Hunger**
4. **Quality Education**
5. **Gender Equality**
8. **Decent Work and Economic Growth**
12. **Responsible Consumption and Production**
13. **Climate Action**
15. **Life on Land**

The depiction and use of boundaries and related information shown on maps or included within text of this document are not guaranteed to be free from error, nor do they imply official acceptance or recognition by the United Nations.
Papua New Guinea (PNG) is a target of international biodiversity conservation efforts because it harbours five percent of global terrestrial biodiversity and part of the third largest contiguous tropical rainforest in the world. The Middle Ramu River basin is a typical lowland rainforest, approximately 180 metres above sea level, with a rainfall of nearly 3,000 millimetres per year. The forest contains over 500 woody plant species, representing one-fourth of the total plant species in the country, including highly prized commercial timber trees such as kwila (*Intsia bijuga*). The forest is also home to the double-wattled cassowary (*Casuarius casuarius*) – one of the last remaining flightless birds and a key species for seed dispersal – and to the national emblem, the endemic bird of paradise (*Paradisaea spp.*).

Located in this diverse landscape, the Wanang Conservation Area (WCA) is the only large rainforest area secured for conservation within the Ramu Block 1 logging concession, an area spanning over 100,000 hectares of forest. In 2008, the Wanang community declined to grant consent for industrial logging on 10,770 hectares of customary land within the logging concession. The community instead land designated the land as a community-based conservation area.

For over ten years, WCA has strongly upheld its aim of protecting the forest while encouraging sustainable use. A strict conservation regime at the core of WCA, supported by the community, ensures the maintenance of vegetation as well as mammal and bird populations that suffer from a combination of logging and increased hunting pressures. Outside this core conservation zone, the community has allocated areas for farming, housing, and development projects.

The Wanang community is made up of approximately 300 people organized in ten clans. Until the early 1990s, the Wanang lived a semi-nomadic life, hunting and gathering food in the forest. Men hunted for wild pigs, cassowaries, wallabies, and bandicoots. When they caught or trapped baby animals, especially piglets, hornbills, cockatoos, or cassowaries, they often domesticated them as pets or raised them for food.

Today, the Wanang people practice subsistence farming through shifting cultivation, with different roles played by men and women. Men usually cut down big branches and canopies, while women clear the understory. Strong fences are built with the tree branches to keep out wild pigs and other animals.

The Wanang speak a native language called Maghu. It is one of the 800 languages of Papua New Guinea that has few written records. Customary land rights are passed down to male children. Women do not own their father’s land but move to live with their husbands and are subject to their land rights.

**Origin and structure**

The Wanang used to be a remote rainforest-dwelling community without access to roads, education, or medical care. When the community was approached by loggers who wished to buy their land, unlike all their neighbours, the Wanang people chose an alternative path. The conservation initiative formally began in 2000, inspired by the village leader, Philip Damen, who saw that logging destroys rivers, hunting grounds, ancestral lands, and landmarks. He believed that the importance of conserving the forest and biodiversity was of far greater value than the money that could be gained through the sale of logging rights.

The Wanang community first approached the Bismark Ramu Group (BRG), a local non-governmental organisation (NGO) that advocates for indigenous peoples’ rights. BRG helped them sign a legal Conservation Deed with demarcated land boundaries for conservation, formally
leading to the declaration of WCA. Then, with the help of BRG, the Wanang contacted the New Guinea Binatang Research Center (BRC) with an invitation to work in their forest. The group also created the Wanang Conservation School, the first school in the entire area to offer both primary and elementary education.

WCA is governed by a Conservation Board, comprised of a chairperson, a treasurer, a secretary and board members. All ten clans that signed the Conservation Deed are represented on the board. In addition, BRC has a representative who serves as a technical officer and advisor. The Conservation Board works closely with the school board for the Wanang Conservation School, ensuring that their activities are complementary. Appointment of new office bearers and any decision for the conservation area is made by the board through a village meeting. Some board members are women.

WCA operations, including entry fees, accommodation for visitors, and the community truck, are run locally. The school provides education to children from all neighbouring villages, not restricting its services to the Wanang community.

Employment opportunities with WCA are also spread across the entire community, including marginalized groups of settlers allowed to live on Wanang lands. Women provide significant inputs to community decisions on education and health via their women's group.
LOCAL CHALLENGES

In the late 1990s, the Middle Ramu River basin, including Wanang village, was designated as a 158,000-hectare forest management area by the PNG Forest Authority for the purpose of timber harvest. This designation as a ‘forest management area’ authorizes any logging company activity, contingent upon landowner approval. The vast majority of communities within the Middle Ramu granted concessions to logging companies. Large-scale selective logging surrounding WCA has resulted in forest disturbance far beyond the scale and degree of subsistence use. Roughly 40 percent of tree volume has been destroyed, and many endemic wildlife species are severely threatened due to habitat loss.

In contrast, the Wanang community has stood behind the conservation of their territory for over 15 years despite daunting pressure from logging companies and nearby communities. When logging companies initially approached the Wanang people, the benefits of granting the concession were evident – the incomes of the community members would substantially increase. The surrounding communities who signed the logging agreement were already using the royalties they earned to buy goods from the town.

Within the Wanang community some villagers wanted logging, but fearful of betraying the solidarity of their people, they couldn’t oppose strongly in public. Also, surrounding communities scorned the Wanang people and often wouldn’t allow them to ride in their vehicles to town, telling them that “since you wanted conservation, let conservation buy your cars to travel to town.” For the first five years, Wanang villagers suffered the consequences of conserving their forest. Despite the hardship and pressure to change their decision, they clans allied together for what they believed was the right thing to do – to conserve the forest and its biodiversity.
Establishing a community-managed conservation area

WCA covers 10,770 hectares of primary forest, with a 2,200-hectare conservation area at its centre. In 2008, foreign biologists associated with the Binatang Research Center (BRC) and Wanang villagers partnered to create a 50-hectare long-term forest dynamics research plot within this core conservation area and a permanent, fully equipped field research station to monitor 280,000 individual trees and their response to climate change.

The plot was designed as part of the Smithsonian Institution’s Forest Global Earth Observatory (ForestGEO), previously known as Center for Tropical Forest Science (CTFS). This network has 65 forest plots around the world that use the same methodology to detect global patterns in forest dynamics. This approach used by ForestGEO is a very intensive form of field research which entails tagging, measuring, mapping and identifying each tree over 1 centimetre in diameter at breast height every five years. In addition, the site provides exceptional opportunities for studies of plant-insect interactions. The detailed study of WCA over the past 10 years provide an essential record of undisturbed forest ecosystem composition in the area, providing a baseline for monitoring future trends.

Biologists from BRC working in partnership with the Wanang community garnered support for the project from government research grants, non-governmental organisations, donor organisations, and corporate donors. Through the combined support of these groups, villagers were provided with annual royalty payments, increased employment, and the first elementary school in the area, in addition to basic transportation and medical assistance. BRC’s research station serves as a base for student education for local community members, students from across Papua New Guinea, and students from foreign universities. A critical element of this programme has trained five young Wanang men to become para-ecologists and research technicians, providing a valuable source of additional income for the local community. They are highly trained on research techniques and taxonomy of plants, birds, and insects.

This experience has demonstrated that, in PNG, direct payments for conservation can compete with the material benefits from resource extraction enterprise. The project has become an example of an economically viable combination of rainforest conservation, social community development, and biodiversity research. It is also a successful example of collaboration between a self-governing village community, a local NGO, the government, local and international industrial partners, and the local and overseas research community.

**Key Impacts**

**Establishing a community-managed conservation area**

- 10,770 hectares have been protected from logging interests, of which 2,200 hectares serve as a core conservation and research area.
- Five young men from Wanang have been trained as para-ecologists and hired as permanent research staff at the research station.
- Project partners have contributed extensive data from 280,000 individual trees to the global ForestGEO study monitoring the impacts of climate change.
Creating educational opportunities for local children

Through the support of John Swire & Sons (Pty) Ltd. and Steamships Trading Co. Ltd., the Wanang Conservation Area established the first school in the region in 2007, offering both primary and elementary education.

Nearly two-thirds of the Wanang population are children, and the vast majority are enrolled at the school. The school encourages girls to enrol, providing them with a formerly unheard-of opportunity to access education in a strongly male-dominated society. The school additionally accepts students from other communities, including those who chose to grant logging concessions, with many students traveling several kilometres to get to the school. Due to the high interest in education, the school board has increased the school’s land boundary and built more houses for teachers.

Before the school was built, everyone in the community was illiterate. Now, the children are learning to read and write. The school has proven to have one of the biggest impacts on local quality of life, with villagers citing it as a sign of change and rising standards of living. The impacts of the school have been recognized by both local authorities and government.

KEY IMPACTS

Creating educational opportunities for local children

- From 2007 to 2015, the school size has increased from 10 to 360 students. 90 of these students are girls.
- The school now has two double classrooms and five government-registered teachers.
- 17 students have graduated from 8th grade, 12 in 2016 and five in 2017.

Improving living standards

In addition to providing critical conservation of the region’s biodiversity, the establishment of WCA has brought about a multitude of positive socioeconomic impacts. Increased monetary income and livelihood options has been a critical impact. Before WCA was formed, Wanang villagers earned approximately US$5 per month. Through WCA’s initiatives, the majority of villagers have been employed at some point as porters or trained field assistants, providing an important influx of cash.

Since the community is remote and lacks transport, accessing basic health services and markets poses a serious challenge. Through support from BRC, the community received a four-wheel-drive truck with a capacity to carry 3 to 5 tons. They now use the vehicle as a daily transport to the nearby town of Madang, enabling them to sell their produce – mostly bananas, cassava, cacao, wild fowl eggs, and sago – and access health services. Despite the advancements enabled by the truck, the lack of roads in the area remains a challenge for the community. During dry seasons, the truck is able to reach the village, but during rainy seasons people have to walk three or four hours to reach the nearest traversable road.

One of the most important benefits of the conservation project has been the losses it has avoided. Most of the surrounding communities that granted concessions to logging companies have, as a result, lost their hunting grounds, water sources, and animals. In contrast, the Wanang community are still able to sustainably manage their ecosystems for hunting, subsistence agriculture, and water security.
KEY IMPACTS

Improving living standards

- Access to a four-wheel-drive truck has enabled villagers to sell produce and access medical services in the nearby Madang Town.
- Health problems, especially malaria and TB, have decreased due to improved transport, medical patrols, and better income through forest conservation.
- New Guinea Binatang Research Center has employed 70 percent Wanang villagers at some point, providing an important livelihood option.
National policy impacts

While securing government funding for local conservation efforts is often challenging in PNG, in the case of the Wanang Conservation Area the government has continually supported local efforts. The Madang provincial government recognized Wanang as a credible conservation initiative and does not allow any logging activities close to its boundaries. Continued support will be critical for the sustainability of WCA as the Ramu Block 1 forest concession is a lucrative source of income for the province. WCA has successfully signed and implemented a conservation deed for their lands and have made progress towards having their conservation priorities approved by the local government. The provincial and national governments are aware of these efforts and are working to have WCA gazetted by the National Executive Council.

WCA has gained accord throughout the country as an example of how local livelihoods can be supported through conservation, research, and education. As a result, the community was invited as key stakeholders to provide their views on an amendment to the Protected Area Bill in 2016, offering a valuable change to shape national policy.

Contributions to the global agenda

The work of WCA contributes to the achievement of several Sustainable Development Goals (SDGs). For example, the establishment of the research centre helps attain the goals of no poverty (SDG 1), zero hunger (SDG 2), decent work and economic growth (SDG 8), responsible consumption and production (SDG 12), climate action (SDG 13), and the conservation of life on land (SDG 15). The school, in turn, supports the goals of quality education (SDG 4) and gender equality (SDG 5). The inclusion of women in the executive boards and their responsibility for garden produce support the goals of no poverty (SDG 1), zero hunger (SDG 2), decent work and economic growth (SDG 8), responsible consumption and production (SDG 12), and gender equality (SDG 5).
Replicability

While PNG laws guarantee indigenous land rights, in practice indigenous peoples often experience strong pressure from private companies to grant concessions to their lands. WCA provides a clear example to other communities of how land rights can be asserted, providing a positive example of withstanding pressure from logging companies, including financial offers and threats.

Both Wanang Conservation School and the truck donated by BRC have enhanced the status of the Wanang Conservation Area and highlighted the potential co-benefits of conservation among neighbouring villages. Nearby villages who opted for logging increasingly recognize that the initial payoff has not been worth the destruction of their forest destroyed after a decade. They now realize this and praise the Wanang for leading by example.

Although the project has not been replicated yet, many communities are seeking advice from WCA and BRC. In 2011, the BRC ran an exchange programme for community groups to learn from each other. Several clan leaders from WCA visited the YUS Conservation Area (Managed by 2014 UNDP Equator Prize Winner Tree Kangaroo Conservation Program), a protected area on the Huon Peninsula of Papua New Guinea, and shared their experience. In return, leaders from the YUS Conservation Area visited WCA. Each group saw what was happening in their respective forests and learned new ways to improve their efforts.

Other communities are also embracing conservation across the country. The Crater Mountain Wildlife Management Area, in the Eastern Highland Province of PNG, was run during the 1990s as a research hub by the Wildlife Conservation Society. However, the project failed after the clansmen decided to drop conservation and opted for gold mining after a gold rush in the conservation area. The failure of this initiative, as well as the successes of WCA and YUS Conservation Area, serve as powerful lessons to facilitate replication across the country.

Scalability

WCA is recognized at the provincial level through the Madang Provincial Management Planning and by the national government by the Department of Conservation and Environment. It has a Memorandum of Understanding (MoU) with the PNG Forest Research Institute, a government authority. WCA has also become nationally renowned as a training centre for PNG and international students as it has hosted over 100 biologists between 2000 and 2016 from various universities, research institutes and NGOs. WCA is known internationally through the results of forest ecology studies it has hosted, and as a successful example of indigenous conservation. The John Swire & Sons (Pty) Ltd. And Steamships Trading Co. Ltd. Are using their WCA involvement as an example of corporate forest conservation strategies.

Through these various initiatives, WCA serves as a role model for the governmental offices, as a leader in biodiversity research and training in collaboration with PNG and overseas institutions, and as an interesting testing ground for corporate involvement in rainforest conservation. It is also influencing the local NGO conservation scene. Within each of these sectors there is great potential for the approaches used to support WCA to be upscaled to influence more widespread action in the government, academic, private sector, and NGO spheres.
Sustainability

WCA is supported financially by the ongoing research taking place at BRC. Scientists from all around the world come to do research, providing income for the local population. As one of the most well-known research centres in the country, with great potential for research and development, and BRC will likely continue to attract researchers, students, and tourists and to bring money into the local economy.

Nevertheless, funding remains a major obstacle to the sustainability of the initiative. For the Wanang communities, converting their effort into a cash economy is the biggest challenge. Many conservation areas in Papua New Guinea have collapsed because no livelihood alternatives were provided to local communities. Concerted initiatives dedicated to livelihood development and sustainable forest management will be essential to support WCA in the years to come.

FUTURE PLANS

- With the help of the government and other partners, the Wanang people want to establish a small health facility. This is critical for well-being as the remote location of the village often makes it very difficult to reach doctors and hospitals.
- The Wanang community aims to encourage increased involvement of youth from the village in conservation science, research, and management.

PARTNERS

- **Bismarck Ramu Group (BRG):** Helped the Wanang community sign a legal Conservation Deed with demarcated land boundaries for conservation.
- **Binatang Research Centre (BRC):** Serves as technical advisor, an interface between the Wanang community and overseas researchers, and as a training centre.
- **Conservation and Environment Protection Authority (formerly Department of Environment and Conservation):** Recognizes WCA as one of the important protected areas in the country.
- **Darwin Initiative:** Supports capacity-building within the community. Since 2007, the Darwin Initiative has funded a total of 10 PNG university graduates to pursue honours and masters degrees. It has also funded a total of 20 para-ecologists to travel to Europe to interact and receive further training with BRC collaborators, including at the University of Sussex in the United Kingdom and the University of South Bohemia in the Czech Republic. In addition, they have funded a biannual student training program since 2006, involving European and PNG students, including Wanang village assistants and para-ecologists.
- **John Swire & Sons (Pty) Ltd. and Steamships Trading Co. Ltd.:** Provided funding to build the research station and the school.
- **Madang Provincial Government:** Declared WCA as protected from any logging activities and included the area in their provincial environmental spatial plan.
- **PNG Forest Authority:** Recognizes the WCA and keeps it away from all other logging activities.
- **Seacology:** Awarded WCA founder Philip Damen the 2009 Seacology Prize for his efforts to protect the lowland rainforests surrounding his home village of Wanang in Papua New Guinea.
- **The Christensen Fund:** Financed three WCA honours students and has contributed to funding current postgraduate students and opening a postgraduate centre at the station. The Christensen Fund has also financed community engagement for indigenous communities to share ideas and experiences regarding conservation.
SOURCES AND FURTHER REFERENCES

ForestGEO, What is ForestGEO? Available online here.

ForestGEO, Wanang. Available online here.


Seacology, Our Projects. Available online here.

Seacology, Past Winners. Available online here.


ACKNOWLEDGEMENTS

The Equator Initiative acknowledges with gratitude Wanang Conservation Area and in particular Pagi Toko for his insight and support. All photos courtesy of Wanang Conservation Area. Maps courtesy of United Nations Geospatial Information Section and Wikipedia.

Editors
Editor-in-Chief: Anne LS Virmig
Contributing Editor: Viktoriia Brezeniuk

Writer
Marcela Torres

Design
Kimberly Koserowski

Suggested Citation