



ALLIANCE FOR INTEGRATED DEVELOPMENT

Nepal



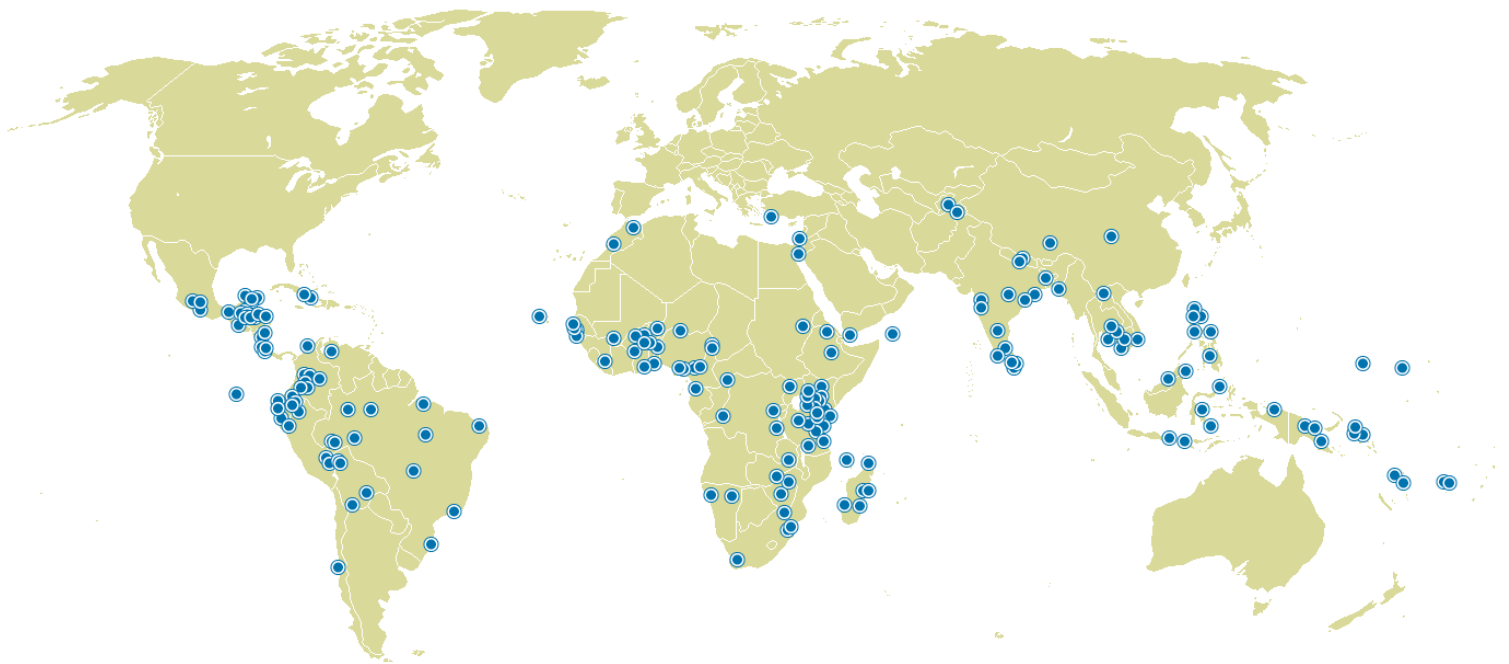
Equator Initiative Case Studies

Local sustainable development solutions for people, nature, and resilient communities

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. The Equator Initiative aims to fill that gap.

The Equator Prize 2014 was awarded to 35 outstanding local community and indigenous peoples initiatives working to meet climate and development challenges through the conservation and sustainable use of nature. Selected from 1,234 nomination from across 121 countries, the winners were recognized for their achievements at a prize ceremony held in conjunction with the UN Secretary General's Climate Summit and the World Conference on Indigenous Peoples in New York City. Special emphasis was placed on forest and ecosystem restoration, food security and agriculture, and water and ocean management. 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. 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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PROJECT SUMMARY

Developed as a response to the overexploitation of natural resources, wildlife poaching, and water pollution, the Alliance for Integrated Development Nepal (AID-Nepal) protects and manages the resources of Jagadishpur, an 'important bird area', a Ramsar site, and the largest manmade reservoir in Nepal. AID-Nepal works to create sustainable livelihoods while also maintaining and enhancing biodiversity in this wetland ecosystem. Organic farming, riverbank restoration, reforestation, ecotourism, and anti-poaching activities are improving incomes in ways that also protect several bird species that are on the verge of extinction, including vultures and cranes. Radio programming and grassroots awareness-raising campaigns have sensitized the public to the links between wetland health and human well-being. Led primarily by women, the initiative has managed to control illegal hunting, promote organic farming, create a revolving micro-credit fund, build an equitable irrigation system, and substantially improve and diversify local livelihoods.

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KEY FACTS

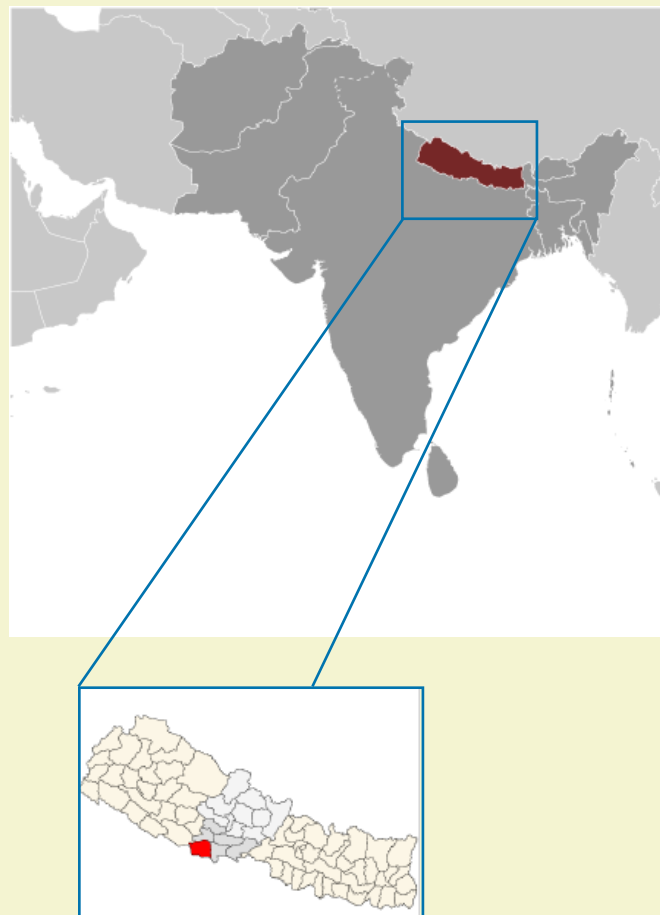
EQUATOR PRIZE WINNER: 2014

FOUNDED: 2009

LOCATION: Jagadishpur, Kapilvastu District, Nepal

BENEFICIARIES: 12,900 people across the Jagadishpur wetland area

AREA OF FOCUS: Wetland conservation and sustainable livelihood development



Background and Context



Globally, healthy wetland ecosystems perform important ecological functions. They recharge groundwater, prevent soil erosion, retain water during dry periods, and prevent damage during floods. Because wetlands purify dirty water, they are considered the 'kidneys of the planet'. Wetlands also provide a variety of resources to the populations living in and around them: fish and plants for food, water for agriculture, drinking water for people and livestock, fibers for crafts, and medicinal plants for health needs, to name just a few. They serve as important habitats for aquatic animals and birds, offering livelihood opportunities in ecotourism and conservation.

A wetland of international importance

Jagadishpur wetland, an area of 2.25 square kilometers, is the largest human-made wetland area in Nepal. A wetland of international importance, Jagadishpur is one of nine Ramsar sites in Nepal. Initially built in 1972 for irrigation purposes, it was declared a Ramsar site in August 2003. The wetland lies between 83°5.00' east and 27°35.00' north in the Niglihawa Village Development Committee of the Kapilvastu District. In Nepal, Village Development Committees are the lowest administrative units. The wetland occupies an area of 217 hectares, of which 60 hectares is marshy land and 7 hectares is shrub land. It is surrounded by a structural dike, which provides a buffer between the wetland and adjacent agricultural land. The wetland is two to seven meters deep and has a water volume of 4.7 million cubic meters, serving as a reservoir to irrigate more than 6,200 hectares of neighboring agricultural land, including land across the Indian border in villages of Uttar Pradesh. There are two additional small wetlands in the area, Sagarhawa and Niglihawa, which provide important ecological services, including additional habitat for native and endemic birds. At present, management responsibility for the three wetlands is shared by the District Forest Office, Western Irrigation Division Office, and the Irrigation Water Users Committee of Kapilvastu.

Plant diversity in 'the tresses of Shiva'

Jagadishpur wetland is located in the foothills of Himalayas, in an area known as the Shivalik Hills, which literally translates to 'the

tresses of Shiva'. The terrain below these hills is defined by two different geological zones, including upper region known as the Bhabar belt and a low-lying flatland called the Terai. The Bhabar belt is characterized by boulders, cobbles, and coarse sand layers with moderate silt and clay. The soils are well-drained and relatively deep. The Terai, in contrast, consists of fine alluvial soil and loam. The Banganga River, which feeds into the wetland, is one of the most important river systems of this area. The water level is high during the monsoon period, but the river is relatively dry during the winter.

The Jagadishpur wetland is in a submerged succession stage, which is part of a natural transition for bodies of water from open water to swamp land to eventually drying out and becoming woodland. The submerged succession stage is characterized by patches of floating species and reed swamp formations. Marsh meadows and extensive mudflats lie in the northern part of the site. The area surrounding the wetland can be classified as subtropical deciduous forest. Along the dike that separates the wetland from agricultural land, a secondary forest comprised by catechu (*Acacia catechu*) and Indian rosewood (*Dalbergia sissoo*) provides a resting place for water birds. At the western end of the wetland there is also a small patch of the area's native *śāl* forest (*Shorea robusta*). Common native plants in the *śāl* forest include: arjun (*Terminalia arjuna*), chebulic myrobalan (*Terminalia chebula*), emblic (*Phyllanthus emblica*), haldu (*Adina cordifolia*), java plum (*Syzygium cumini*), myrobalan (*Terminalia bellirica*), and silk cotton tree (*Bombax ceiba*).

The primary vegetation on the shores of the wetland is made up of cattail (*Typha angustifolia*) and the highly invasive gloria de la mañana (*Ipomea carnea* subsp. *fistulosa*). Although these two species dominate, arsenic bean (*Cassia occidentalis*), Bonpland's croton (*Croton bonplandianus*), cocklebur (*Xanthium strumarium*), floss flower (*Ageratum conyzoides*), jack-in-the-bush (*Chromolaena odorata*), parthenium (*Parthenium hysterophorus*), sickle senna (*Cassia tora*), and spikenard (*Hyptis suaveolens*) are also found along the embankment. The aquatic vegetation is primarily floating species, including lotus (*Nelumbo nucifera*), wild rice (*Hygrorhiza aristata*),

and pondweed (*Potamogeton nodosus*). These native species are threatened by aquatic invasive species such as rice grass (*Leersia hexandra*), rigid hornwort (*Ceratophyllum demersum*), and water finger-grass (*Paspalum distichum*). Among the invasives, gloria de la mañana (*Ipomoea carnea* subsp. *fistulosa*) is the most abundant and problematic species, acting by disturbing undergrowth vegetation and causing sedimentation by blocking the flow of water.

An internationally-recognized important bird area

The wetland is home to more than 118 species of birds, and serves as an important nesting ground. It is one of 27 Birdlife International 'important bird areas' in Nepal. The site provides important wintering and stopover habitats for water birds and small passerines. Noteworthy are the birds of prey, coots, cormorants, cranes, ducks, egrets, geese, grebes, gulls, herons, jacanas, kingfishers, rails, storks, terns, and waterhens. Jagadishpur also provides shelter for many rare, endangered bird species, including the Asian openbill (*Anastomus oscitans*), the Indian sarus crane (*Grus antigone*), the woolly-necked stork (*Ciconia episcopus*), and the yellow bittern (*Ixobrychus cinensis*).

Nearly half of the bird species found in Jagadishpur, and 12 of the 25 most abundant species, are either winter visitors or passage migrants. Of these, the lesser whistling-duck (*Dendrocygna javanica*) is the most abundant, with 2,000 counted in the month of March 2014. Other high species counts included 6,000 common coots (*Fulica atra*) in January 2014, which is the highest count for this species in the country. In the study that recorded these data, winter migrants reached peak abundance in January. Other species, mostly residential, were most abundant in March. This may have been due to the lower water levels and consequently higher food availability in March. In addition, smaller wetlands in the vicinity dry up at this time of the year, and this may act to concentrate birds at persistent water bodies.

Wildlife native to Jagadishpur wetland

Of the 201 species of fishes in Nepal, 39 are found in Jagadishpur wetland, representing 12 families and 7 orders. Notable species include lowland Terai endemics such as the bronze featherback (*Notopterus notopterus*) and the large razorbelly minnow (*Salmostoma bacaila*), as well as the threatened swamp barb (*Puntius chola*), and other more common species that are prey for waders and water birds. Although some species are common in both seasons, the highest number of fish can be found in the summer months.

Among other vertebrate species, 39 reptiles species and 13 mammal species have been recorded in Jagadishpur, including small populations of Indian gray mongoose (*Herpestes edwardsi*), golden jackal (*Canis aureus*), golden monitor lizard (*Varanus flavescens*), Indian fox (*Vulpes bengalensis*), jungle cat (*Felis chaus*), smooth

coated otter (*Lutrogale perspicillata*), squirrels (*Sciuridae*) and wild boar (*Sus scrofa*). Among these, two species are protected by the National Parks and Wildlife Conservation Act of 1973, and four are included in different threat categories of the IUCN Red List. The areas around the wetland harbor five species of poisonous snake and twenty species of non-poisonous snakes.

Challenges to national stability: conflict and catastrophe

Nepal is one of the world's poorest countries, ranking 145th out of the 185 countries evaluated in the 2014 Human Development Index. Nearly a quarter of the 28 million Nepali people live below the poverty line, with 80 percent of those below the poverty line living in extreme poverty. Within the country inequality is deeply pervasive, dictated by caste and other social hierarchies, and has played a strong role in shaping social, economic, and political realities. This inequality has been exacerbated by the effects of a decade-plus long civil war initiated by the Maoist Communist Party of Nepal in 1994. Over the course of twelve years, this conflict claimed the lives of more than 13,000 people, displaced approximately 50,000 more, and led to the overthrow of the country's 240-year-old monarchy. In 2006, a Comprehensive Peace Agreement was signed by both government and Communist Party forces in an attempt to bring peace to the Nepali people while allowing for political change. Through this agreement, Nepal became officially recognized as the 'Federal Democratic Republic of Nepal'. A new constitution, which came into effect in 2015, engenders rays of hope for the nation's prosperity and development.

The series of earthquakes that hit Nepal on 25 April 2015 and 12 May 2015, measuring in at 7.8 and 7.3 on the Richter scale, respectively, led to further levels devastation in a country just beginning to recover from the political instability of the decade-long civil war. The earthquakes killed over 9,000 people, injured approximately 22,000, and displaced hundreds of thousands with widespread implications for food security, development, and local livelihoods. The crisis prompted an inflow of nearly US\$30 million from international humanitarian and development organizations, including UNDP and UNICEF, and bilateral donations from countries such as the United Kingdom, India, China, and the United States. In addition to the immediate widespread devastation of the natural disasters, the lingering effects of reconstruction have led to dramatic decreases in tourism across the country.

Setting the socioeconomic context: subsistence farming, sharecropping, and remittances

Located in south-central Nepal on the border of India, the Kapilvastu District is a few hundred kilometers away from the epicenter of both earthquakes, and therefore was not victim to the widespread structural damage and loss of life that occurred in closer districts. However, crisis has nonetheless had a major impact on communities across the district in

“Climate change has led to changes in rain patterns. Many of the small wetlands in our village, which used to have abundant water, are now like a desert.”

Ms. Shanta Aryal, Chairperson, Gautam Buddha Wetland Management Committee

terms of funds available for community development and environmental conservation, political access, and tourism. In Kapilvastu, the major caste groups are Tharu, Yadav, Muslim, and Kurmi, with recent hill-tribe migrants also making up a significant part of the population. Within the Niglihawa Village Development Committee, according to a 2011 census, the population is 12,900 people making up 2,150 households. The VDC is dominated by Terai castes, which are a particularly vulnerable group due to social exclusion and resulting poverty. Literacy rates at the time of the last census were 37 percent, with four schools serving 802 children.

The majority of the employed local population, 78.4 percent, is engaged in agriculture. Of the local farming population, 85.2 percent incorporate livestock and poultry in their farming system. The predominant system is family farming, with many families depending on sharecropping, and farmers commonly seeking supplemental income by selling firewood or by hiring themselves out as farmhands or rickshaw pullers. A good amount of farming and resource extraction in the wetland is undertaken by women, including fishing, herb cultivation, and cutting grass for weaving into baskets and mattresses. According to wellbeing indicators, 67 percent of families fall under the extreme poverty line.

Another less visible aspect of the local economy is remittances, with a reported 12 percent of the population immigrated abroad, largely to the Middle East, to find employment and send money home. This has meant that in recent years there has been increased livelihood diversification, with some individuals electing to open small-scale enterprises with remittances received from family members working abroad instead of farming.

A cultural and religious mecca

In addition to its biodiversity, the area is also home to a rich religious history. The town of Lumbini, located adjacent to the Kapilvastu district, is known as the birthplace of Gautama Buddha and is one of the holiest sites on earth for Buddhists. An UNESCO World Heritage Site, it is currently being developed as a Buddhist pilgrimage centre. The archaeological remains on the site associated with the birth of Buddha contain important evidence about pilgrimages from as early as the 3rd century BC, including a commemorative pillar erected by the Indian emperor Ashoka. Lumbini, known as the Buddhist Mecca, has close ties to the nearby town of Tilaurakot, which contains the archeological remains of the Shakya Kingdom, where the Buddha lived as Prince Siddhartha Gautam until the age of 29. UNESCO is involved with an archaeological investigation in this historical area to identify, evaluate, and interpret the significance of various artifacts. Both Lumbini and Tilaurakot serve as reminders of a rich religious and cultural history that unfolded the Shivalik Hills, a legacy inherited by the communities living across the Kapilvastu District.

Threats to the wetland ecosystem

Jagadishpur wetland has been plagued by a range of threats, including overexploitation of its resources, poaching of wildlife, land conversion for agriculture, deforestation, water pollution from inorganic agricultural runoff, and the introduction of invasive alien species. Multiple factors have exacerbated the problem, including social conflict over resource access and rights; lack of awareness

about the importance of intact, healthy, properly functioning wetland ecosystems; and a general overdependence on wetland resources paired with insufficient income diversification options for the local population. Jagadishpur has become famous for its birdlife, both in diversity and abundance, which has led to all-too-recognizable patterns of large-scale poaching of residential and migratory birds. Important plant species have been lost due to open grazing on the wetlands, and the area has also faced problems with excessive siltation and sand extraction.

Another persistent problem has been coordination of conservation enforcement efforts. Despite the fact that communities living adjacent to the wetland traditionally knew how to best safeguard and effectively manage the local ecosystem, the proper incentives and institutions have not been put in place to promote the use of this traditional knowledge to support sustainable land management. Government agencies with jurisdiction in Jagadishpur have also been ineffective, lacking awareness of the environmental problems facing the area and therefore failing to develop a coherent coordination system. All of these challenges have made conservation and sustainable use activities in the wetland particularly challenging.

Creating a structure for community-based leadership

In response to these challenges, a group of governmental and non-governmental organizations engaged with communities in the area came together to formulate a plan of action to protect this important wetland ecosystem and to promote sustainable livelihoods for local communities. Among the lead players in this initiative were four governmental groups – the Niglihawa Village Development Committee, the District Forest Office, the Department of Forest Community Forest User Groups, and the Irrigation Water User's Committee – as well as district-based NGOs including SAGUN, Save the Banganga, and Abhiyan Kapilvastu.

The creation of AID-Nepal to execute programs in social mobilization, community empowerment, and reforestation activities was enabled by initial funding from the Canadian Cooperation Office in 2009. A follow-up project – 'Participatory Conservation Initiatives of



Jagadishpur Wetland’ – was undertaken in 2010 with support from the UNDP-implemented GEF Small Grants Programme. The objectives of this project were to create income-generating programs based on sound wetland management, to build the capacities of user committees for multidimensional land use, and to promote programs related to alternative energy use.

AID-Nepal’s formative years presented a number of challenges. Achieving success was not a linear process and required trial and error to overcome significant hurdles. Among the primary challenges was the local government’s lack of faith in community control of the project. Several iterations of project mandates, plans, and budgets were exchanged, eventually resulting in a common vision and concrete plan for engagement that the local government conceded to support.

Another obstacle was communicating the goals of the project and the need for community engagement to a largely illiterate population. In order to overcome this, AID-Nepal used radio broadcasts by the local FM radio station Buddha Awa to ensure that project objectives were communicated in a clear way that could be understood by the target populations. This radio outreach strategy was complemented by the distribution of brochures with project information as well as a public outreach campaign with that posted project slogans and objectives on billboards in strategic locations. Ethnic rivalries and animosity between local indigenous groups and more recently arrived hill-tribe migrants were minimized by ensuring clear and transparent coordination among all local stakeholders from the very beginning of the project.

To meet its goals, AID-Nepal actively supported the development of six Community Wetlands User Groups (CWUGs) spanning all communities in the Jagadishpur wetland area. The organization provided trainings in topics ranging from leadership, to institutional development, record and account keeping, microcredit group mobilization, participatory wetland conservation, bird population monitoring, capacity building against poaching, alternative energy technologies, and organic farming. After receiving their training, Community Wetlands User Groups became ambassadors of conservation and sustainable livelihoods in their villages and communities. They raise awareness about the importance of the Jagadishpur wetland including the diversity of native wildlife, the ecosystem services the wetland provides, the potential for ecotourism, and the responsibility of safeguarding this natural treasure for future generations. The groups provide information about how to sustainably collect fodder, grasses, building materials, herbs, medicinal plants, vegetables, firewood, fish, and other natural resources in the wetland that together constitute the diet, medicine, and livelihoods of local residents. Through this work, a culture of trust and harmony has been built, placing wetlands conservation at the center of social well-being.

Governance and institutional structure

Alliance for Integrated Development aims to support community-based action to improve livelihoods, environmental health, and sustainable management of local wetlands. AID-Nepal is governed by an elected Executive Committee, which provides overall policy direction and guidance on management and implementation of projects in four focus areas: social development, economic improvement, environmental management, and capacity building. The Executive Committee seeks the advice from partners and technical experts on a rolling basis as is

needed for specific projects. The Executive Committee is elected by and responsible to AID-Nepal’s General Council, which includes community members residing in the Jagadishpur wetland, members of partner organizations, and other supporters who have been active in the work of AID-Nepal since its inception. Although the Executive Committee is responsible for making policy recommendation and guiding the implementation of projects, all AID-Nepal activities – including annual plans, programs, and finances – must be approved by the General Council. AID-Nepal has developed a five-year strategic plan, along with an organizational policy, which guide financial and human resource decisions. Decisions for sustainable wetlands management are always participatory and are taken in consultation with other partners working on wetland conservation in the area. Three staff members – a project coordinator, finance officer, and social mobilizer – are managed by the Executive Committee to implement project activities.

The organization has supported the development of six socially inclusive Community Wetlands User Groups, with a total of 369 members, that work to execute AID-Nepal’s programs at the local level. The Community Wetlands User Groups include all members of the communities surrounding Jagadishpur wetland, including traditionally marginalized populations of the Tharu, Madhesi, Muslim and hill migrant peoples. These groups have empowered communities to overcome generations of poverty, stigmatization, and marginalization by supporting their leadership in planning, implementing, and monitoring wetland conservation activities. Six representatives, each elected by one of the Community Wetlands User Groups, together form the Gautam Buddha Lake Conservation Main Committee, enabling communities to work together to mobilize support and manage resources at the landscape level. The Community Wetlands User Groups and the Gautam Buddha Lake Conservation Main Committee work as local ambassadors for both conservation and livelihood enhancement activities. The groups have addressed resource conflicts and facilitated a high degree of harmony among local stakeholders. Although Jagadishpur wetland is technically owned by the government, the Community Wetlands User Groups have usufruct rights, giving them an important measure of governance authority over local resource access and use. As a sign of confidence in community management and stewardship, the secretary of the Niglihawa Village Development Committee allocated NPR 30,000 (ca. US\$280) to the Community Wetland User Groups in April 2012.



Key Activities and Innovation



Alliance for Integrated Development Nepal empowers communities to obtain sustainable livelihoods from wetland resources, while maintaining and enhancing biodiversity and healthy ecosystems. The group has reached more than 2,150 families and a total population of 12,900 people. The vast majority are poor, marginalized, and lack both sustainable livelihood options and access to basic public services.

Alliance for Integrated Development has helped Community Wetlands User Groups to transform the management of wetland resources into a sustainable activity that restores ecosystem health while providing for local livelihoods. The main activities of the organization align with six crosscutting themes and program areas: (i) organic farming, (ii) riverbank restoration and reforestation, (iii) anti-poaching, (iv) sustainable livelihoods, (v) ecotourism, and (vi) climate change mitigation and adaptation. Through its activities, the organization has served as an important platform for conflict resolution and benefit sharing across the wetland area. A five-year Wetland Management Plan has also been produced, through which local stakeholders have gained awareness about international treaties and conventions around wildlife, biodiversity, and wetlands, and the significance of Jagadishpur in these contexts. Irrigation systems have been repaired and maintained, illegal hunting has been controlled, and projects to conserve and sustainably manage wetland resources have been developed. Also noteworthy is the fact that women have led initiatives across all these areas of work. The project has demonstrated – among other things – that environmental sustainability and economic viability are not mutually exclusive, and to pit one against the other is to create a false, and counterproductive, dichotomy.

Community-led organic farming

One of the main issues addressed by the organization is the common practice of using chemical inputs and fertilizers, which has devastated local ecosystems by producing run-off that contaminates wetlands. As an alternative to chemical agriculture, Alliance for Integrated

Development has worked to provide trainings in organic agriculture for local farmers in order to position them as agents of change within their communities. Since the inception of this program AID-Nepal has trained 66 farmers – over half of which are women – on the importance of wetland ecosystems, the impacts of using chemical fertilizers, and the benefits of pursuing organic agricultural practices. The program also provides technical, in-the-field trainings on organic agriculture and integrated pest management. Farmers in the program have found that the transition to environmental farming is both environmentally beneficial and cost-effective. Organic farming in the area has required less resources to be invested in chemicals and resulting in greater crop productivity.

In addition to encouraging farmers to pursue organic farming on their own land, the program has also created 10 ha of organic agriculture demonstration plots. More than 100 families have visited these demonstration plots to learn about environmentally-friendly farming systems. Alliance for Integrated Development further supports the extension of organic agriculture by providing interested farmers with access to seeds and support connecting to markets. More than 40 ha of land is now farmed organically in the area around the wetland. Women in particular have benefited from this initiative by planting organic kitchen gardens, which has allowed them to reap the benefit of extra disposable income. Monthly income from the sale of vegetables adds between NPR 18,000 (approximately US\$175) and NPR 32,000 (approximately US\$310) to household income.

Riverbank restoration and reforestation programs

AID-Nepal, working through the Community Wetlands User Groups, has focused particular effort on protection and restoration of the Banganga riverbank, which is adjacent to the wetland. They have developed land management plans for 450 farmers, bringing grazing under control and properly managing the plots to protect the riverbank from erosion. Bioengineering structures have also been constructed following local environmental management

practices to strengthen the banks of the river. These structures are low cost and source locally available materials – including jute sacks, sandbags, and fast-growing trees – to reduce erosion and preserve productive land. The riverbank has been covered with over 8,000 trees including arjun tree (*Terminalia arjuna*), bamboo (*Phyllostachys* spp.), catechu (*Acacia catechu*), Indian rosewood (*Dalbergia sissoo*), java plum (*Syzygium cumini*), leafflower (*Phyllanthus* spp.), lebbek tree (*Albizia lebbek*), myrobalan (*Terminalia bellirica*), neem (*Azadirachta indica*), silk cotton tree (*Bombax ceiba*), soapberry (*Sapindus* spp.), Indian white cedar (*Dysoxylum* spp.), and Indian woodapple (*Limonia acidissima*). This approach has protected more than 50 hectares of land from erosion and helped to preserve the riverine ecosystem.

In a complementary effort to reduce local pressure on the riverine forest surrounding the wetlands, AID-Nepal has worked through the

Gautam Buddha Lake Conservation Committee and the Community Wetlands User Groups to distribute rice husk stoves. In addition to reducing pressure on local forests, the stoves have also provided an alternative to the common practice of using cow and buffalo dung as a cooking fuel, which has negative health impacts. Rice husk stoves have been distributed to more than 200 families. AID-Nepal has also supported construction of 30 biogas units, 60 solar electricity systems, and improvements to over 400 cooking stoves.

Anti-poaching campaigns

Bringing a stop to wildlife poaching and the smuggling of birds and wetland species is a top priority for Alliance for Integrated Development. Three poaching and smuggling control programs have been started: one by over 450 youths and school students, the



second by 90 representatives from the various Community Wetlands User Groups, and the third by 110 members of the Department of Forest Community Forest User Groups. Under campaign slogans such as 'the lake is ours', groups that were previously involved in illegal activities have joined the conservation league. Local schools have been a primary vehicle for anti-poaching campaigns and messages, with local youth picking up the mantle and leading on conservation efforts. Campaigns focusing on anti-poaching and anti-smuggling have led to a near-complete cessation in wildlife and bird poaching. One of the more successful initiatives has engaged local youth and children to record the names of species found in the wetland and work with Community Wetlands User Groups on monitoring and evaluation activities.

Expanding sustainable livelihood options

Numerous income generating activities have been initiated to reduce pressure on the local ecosystem from grazing and conversion of land to agriculture. Activities have targeted poor and disadvantaged groups, who have been supported to pursue alternative or supplemental livelihood activities, such as selling leaf plates, harvesting medicinal plants, and using sustainably harvested wetland grasses to weave mattresses and baskets. To coordinate these activities AID-Nepal mobilized the six Community Wetlands User Groups to pool resources amounting to USD 26,000 in a revolving fund. This fund, which is loaned at a 12 percent interest rate, provides the local population access to capital for new projects. Alliance for Integrated Development has provided training sessions on community-led savings and credit programs, and options for how to operate the revolving fund. Members of the Community Wetlands User Groups can now access loans at a relatively low interest rate, where before no such access existed or came with prohibitively expensive transaction costs through middle men.

The interest paid back by community members is used by the Community Wetlands User Groups to invest in conservation initiatives. The combined training in organic farming, alternative livelihoods, and community-based savings and loans has had the most transformative impact for women, who have improved their status as leaders in the community and been provided new pathways out of poverty and dependence. Women are now recognized as leading farmers in the community, instead of simply assistants to their husbands.

Village-directed ecotourism

AID-Nepal is also undertaking a number of ecotourism-related initiatives that focus on the towns of Lumbini and Tilaurakot as sacred Buddhist sites. Under the supervision of AID-Nepal, the Gautam Buddha Lake Conservation Main Committee serves as an institutional headquarters for ecotourism activities and has drafted an action plan for village-based tourism activities that capitalizes on the area's religious importance to draw attention its impressive biological and cultural diversity. A five-foot tall statue of Buddha has been erected at the edge of the wetland in Jagadishpur village, including a garden with seasonal plants, bathroom facilities, seating, and a potable water system. An operation and maintenance guideline was prepared to ensure the long-term sustainability of the

initiative. This miniature park encourages visitors to visit and enjoy the wetland and has fostered religious harmony among villagers, irrespective of caste and religion.

AID-Nepal likewise hopes to draw tourists to other towns surrounding Jagadishpur wetland and has made investments to leverage their unique cultural and biological attributes. In one program, musical instruments have been provided to Harnampur village for the promotion and conservation of Tharu culture, with additional resources invested in a Tharu cultural group, a home-stay facility, and bird-watching guide services.

Ecotourism has improved drastically: on average, more than 12 tour groups visit the wetland each month. Local youth groups have self-organized to offer visitors boat tours and have established a code of conduct to facilitate an environmentally friendly and culturally relevant experience. Local ecotourism has placed an emphasis on reducing environmental impacts and enhancing the cultural integrity of local people.

Adaptation to climate change and risk mitigation

In communities worldwide, the effects of climate change are most clearly seen in the water sector. The restoration of the wetland contributes to water management for climate change adaptation. Maintenance of a healthy wetland is paramount for reducing the vulnerability of surrounding communities to climate-related stress. The improvement of local livelihoods through initiatives such as organic farming and small-scale wetland resource-based enterprises has increased adaptive capacity of nearby communities. The project has also contributed to climate change mitigation by promoting rice-husk stoves in place of traditional stoves reliant on forest resources or on cow and buffalo dung. The organization has contributed to risk mitigation strategies by performing maintenance of the Jagadishpur wetland dykes in order to reduce the threat of massive floods (4.7 million cubic liters) inundating neighboring agricultural croplands. The construction of bioengineering structures along the Banganga riverbank, in addition to preventing erosion, functions to protect the farmland of 18 nearby villages from floods.



Impacts



ENVIRONMENTAL IMPACTS

Jagadishpur wetland has faced multiple environmental threats, many of which Alliance for Integrated Development has set out to address with notable success. Overexploitation of wetland resources, water pollution, encroachment, and illegal hunting were all major issues facing the local population. The restoration of wetland habitat and water quality has served as a social safety net by restoring ecosystem services and providing a strong base on which to build sustainable livelihoods. The organization uses a number of participatory tools and techniques to observe and record changes in environmental health. Emphasis has been placed on group discussions, practitioner interviews, participatory bird counts, comparisons with baseline data and oral histories of local elders.

Since all farmers in the area depend on wetland water for irrigation, extreme weather events such as droughts and floods pose a significant challenge. Repairs to the local irrigation system have helped to address this problem. Water pollution from chemical inputs and agricultural run-off, which was rampant, has been reduced dramatically through training in organic farming methods. Through a combination of training and awareness-raising campaigns, the organization has improved water quality and retention as well as controlled overfishing. To reduce the problem of sedimentation in the reservoir, the Western Irrigation Development Division has been spraying a natural herbicide around the reservoir since 2010, spending between NPR 20,000 and NPR 50,000 annually to control the growth of the invasive alien species, *Ipomoea carnea* subsp. *fistulosa*.

Among the more notable achievements of the organization has been the restoration of endemic populations of migratory birds, vultures, and cranes. Prior to project interventions, birds hunted in Jagadishpur were sold in markets across Nepal and India. To address poaching and trafficking, the group has undertaken a number of anti-poaching campaigns, using youth clubs, information campaigns, and radio programming. Findings from several studies

revealed that numbers of migratory birds are increasing. Three types of vultures that are on the verge of extinction, the Egyptian vulture (*Neophron percnopterus*), the white-rumped vulture (*Gyps bengalensis*), and slender-billed vulture (*Gyps tenuirostris*) have recently been found in or near Jagadishpur wetland. The number of new nests and breeding locations are also on the rise. Pressure on local forests has been reduced by the introduction of rice husk stoves, further contributing to the preservation of habitat for birds and other wildlife.

Local women have assumed a leadership role in awareness-raising campaigns, holding street dramas to highlight the importance of wetland species and environmental health. Billboards with conservation messaging have been strategically erected in public places, along with postings for rewards for leads to illegal poachers. The group has also invested in strategies that emphasize an approach to conservation that balances ecosystem health and sustainable livelihoods for the local population. It has been particularly effective



in demonstrating – through the Community Wetlands User Groups – how wetland resources can be managed in a sustainable way that create pathways out of poverty and simultaneously support ecosystem health.

SOCIOECONOMIC IMPACTS

Every year Jagadishpur wetland is partially drained to collect fish and other resources such as snails and edible plants that support local subsistence. During this operation, the inflow of water to the reservoir is lessened or stopped and outflow increased. Fishermen working in the reservoir pump water out, often using mechanized pumps. When the water level is less than knee-deep, fish are caught with nets and by hand. Different parts of the reservoir are drained at different times, and in exceptionally dry years, the entire reservoir has occasionally been completely drained to catch fish. The reservoir also contributes apple snails (*Pila globosa*) and water-chestnut (*Trapa bispinosa*) for food, cattails (*Typha elephantina*) for mat-making, and the invasive gloria de la mañana (*Ipomoea carnea* subsp. *fistulosa*) for medicine and weaving. New harvesting activities of native plants have been explored to great effect by AID-Nepal, and a previously non-existent market has been created for medicinal plants. Sales of medicine and crafts derived from wetland plants have led to an increase in income of between NPR 8,000 (US\$75) and NPR 16,000 (US\$150) per family following the initiative of AID-Nepal's project activities.

The Community Wetlands User Groups have been the main delivery mechanism for sustainable livelihood activities, giving an institutional face and form to addressing local poverty, promoting alternative livelihoods, and creating jobs. Each of the six groups established a revolving fund, which has amassed US\$26,000 to support local initiatives. The revolving fund has been used to launch a number of small-scale enterprises, with the loan interest from the fund invested in social welfare projects such as riverbank protection and dyke maintenance. 175 women have benefited from the revolving fund and have started enterprises including mattress making and poultry and goat farming, and have also opened vendor shops for the weekly 'haat bazaar', or market. Through these avenues, women have increased their family's income by NPR 13,000 (US\$122) to NPR 37,000 (US\$347). Organic farming promoted by the alliance has likewise improved food security and increased incomes by NPR 6000 (US\$56) to NPR 32000 (US\$300) per family. Distribution of more than 400 improved cooking stoves has improved population health, particularly among local women, and has resulted in an increase in 'smoke-free' villages buffering the reservoir.

GENDER IMPACTS

The empowerment of women has been critical to the success of Alliance for Integrated Development, with women leading at all levels of the organization and serving as drivers of mobilization efforts at the community level. Six women-led Community Wetlands User Groups – with a total of 369 members – participated in capacity building and training, which reached women from Tharu, Madhesi, Muslim, and hill migrant communities. Women take the lead in planning, implementing, and monitoring activities around

wetland conservation and sustainable livelihoods. The principles of social inclusion and gender equality have been prioritized since the organization was founded. A noteworthy achievement of the project has been its success in attracting Muslim women, who have historically been marginalized from participation in public life, but have become actively involved in project activities.

Overall, women constitute the overwhelming majority (95 percent) of participants in both the Community Wetland Conservation Groups and the Gautam Buddha Lake Conservation Main Committee. Women have been at the forefront of wetland restoration activities, including the creation of parks for ecotourism. This has positioned women as agents of positive social and environmental change in the region and drivers of social harmony in the villages, irrespective of caste or religion. The establishment of a functioning credit and savings program has helped hundreds of women overcome generations of poverty and social exclusion.

POLICY IMPACTS

After the Comprehensive Peace Agreement in 2006, political parties in Nepal multiplied, making it difficult for non-governmental organizations to establish reliable relationships with the various political parties. There were also residual effects of armed conflict in the form of abductions, kidnappings, and threats of violence for anyone operating in the political space of the country. Alliance for Integrated Development maintained a focus on 'listening to the smaller voice' and equal opportunity stakeholder consultation, which helped to mitigate some of the challenges posed by the political climate. The group placed an emphasis – and still does – on transparency, accountability, and the rule of law, all tenets they feel help them to successfully navigate the political landscape in Nepal.

Through advocacy and lobbying, Alliance for Integrated Development has been able to translate some of its good practices into policy. Most notable among the organization's lobbying efforts is the inclusion of lessons from Jagadishpur wetland in the 2012 amendments to the National Wetland Policy. The organization worked with relevant ministries drafting the policy to communicate challenges inherent to wetland management, as well as opportunities for initiatives that support both conservation and the creation of sustainable livelihoods. This partnership between national ministries and Community Wetlands User Groups will be one of the legacies of AID-Nepal, with revised National Wetland Policy enshrining the imperative of working together for wetland conservation and sustainable use.

A related result of the group's advocacy efforts was the first-ever recognition of the importance of wetlands in the Government of Nepal's three-year national plan for the period 2011-2013. This acknowledgement represents the first time that such a document has highlighted the importance of wetland conservation. Article 2.3 of the working strategy for the forestry sector references the National Wetland Policy to emphasize that wetlands must be conserved in recognition of the resulting biodiversity, ecological and livelihood benefits. The national plan encourages relevant ministries to prioritize and allocate resources towards wetland conservation and sustainable use activities.

Sustainability and Replication



Alliance for Integrated Development – in collaboration with the Community Wetlands User Groups – was also successful in banning the allocation of a 10-year fishing contract to a private company looking to pursue commercial fishing operations in Jagadishpur. This contract likely would have led to the wholesale depletion of local fish stocks, as well as degradation of the local environment, without any monetary benefits reaching the local population.

SUSTAINABILITY

The organization has demonstrated signs of financial and organizational sustainability. The community revolving fund is a financially viable, locally-driven savings and loan program that will be sustainable over the long-term as long as it continues to be a driver of opportunity for small-scale entrepreneurs. The Niglihawa Village Development Committee funds the Community Wetlands User Groups to ensure they can pursue conservation and sustainable use activities, allocating NPR 30,000 (US\$275) per year, as approved by the Council of Village Development.

In terms of institutional sustainability, Community Wetlands User Groups are taking the lead, raising local awareness about the importance of wetlands to local health and well-being. They are organizing progressive activities in sustainable fishing, grazing, fuel wood and fodder collection, water capture for irrigation, and the harvesting of wetland products, all of which have been outlined in a Wetland Management Plan for 2012-2017. The group has successfully implemented a reward and punishment model to stem wildlife poaching and trafficking, which serves an important normative function in ensuring the sustainability of the project. Multiple partners across sectors support the longevity of the organization.

While cooperation with local and national government authorities has been successful on several fronts, there is still a need and opportunity for greater mainstreaming of the Jagadishpur Wetlands Management Plan (2012-2017) and Ecotourism Plan (2013-2018) into the periodic plans drafted by the Government of Nepal. The Jagadishpur strategic

plans have the advantage of having been drafted through extensive consultations including, most importantly, with the Community Wetlands User Groups themselves. The Government of Nepal would be well-served by further mainstreaming the community-based wetlands management vision, and allocating funds to scale-up local conservation and sustainable use activities.

REPLICATION

Jagadishpur is a Ramsar site, leading its restoration to be hailed as an international achievement. The good practices generated by the project are being replicated in Brijatal wetland in Kapilvastu and Gajedi wetland of Rupandehi District. The active participation of women, including Muslim women, has inspired women of neighboring communities to make use of their skills and to lead conservation activities. The river bank restoration and reforestation carried out by Alliance for Integrated Development has also been adopted by the National Disaster Risk Reduction Center Nepal (NDRC Nepal), a national NGO. The social mobilization approach, cooperative model, and community bank system are all being replicated by six NGOs in the Kapilvastu district and two in Arghankhanchi district.

PARTNERS

Different public and private institutions at the local and regional level have all helped in carrying out project activities.

Government partners

Each of the following government agencies have been actively involved in all phases of the project:

- **The Niglihawa Village Development Committee** has provided vital assistance by granting access to work on Jagadishpur wetland, as well as providing technical, policy, and financial support.

- **The National Lake Conservation Development Committee** contributed funds to erect the statue of Buddha and build ecotourism lodges.
- **The District Development Committee of Kapilvastu** provided technical support for community development work.
- **The District Forest Office of Kapilvastu** serves as the Ramsar authority and has helped formulate plans, programs, mandates, and guidelines for wetlands and forest conservation in and around Jagadishpur, has supported promotion of alternative energy technologies, and has assisted in delineation and demarcation of wetlands area.
- **The District Soil Conservation Office of Rupandehi** has assisted in riverbank protection work through bioengineering technologies.
- **The District Agriculture Development Office** has supported with training on improved farming systems, integrated pest management, and organic farming.
- **The Divisional Irrigation Office** has helped maintain the water level in the wetland, as well as providing periodic maintenance of dyke (intake and offtake, canals, etc).

Non-governmental partners

- **Buddha Awaz**, the local FM radio station, has provided support with the dissemination of project-related information.
- **The Tharu Welfare Committee** and **The Muslim League of Niglihawa** have led and supported activities that promote local culture, traditions, and values.
- **SANGUN**, a local NGO, has played a strong role in social mobilization. SAGUN was the entity that initially formed the Community Wetlands User Groups. AID-Nepal then supported these groups to develop community-level action towards socio-economic development and wetland conservation.





“There is a strong relation between our livelihood and natural resources. Water, forest, and land is our life and means for living. Unless we safeguard these resources, we cannot continue farming and animal husbandry.”

Ms. Shanta Aryal, Chairperson, Gautam Buddha Wetland Management Committee

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