Chiang Rai, Thailand

Urban biodiversity for a sustainable city and climate change resilience

ICLEI Local Governments for Sustainability

The Urban Biodiversity towards Sustainable City and Climate Change Resilience project (UBD-SCCCR) is a local initiative in Chiang Rai, Thailand, to conserve and protect local biodiversity and natural resources for the benefit of the city's community. The project aims to enhance awareness of the socio-economic importance of biodiversity and ecosystems by using a participatory approach to include urban biodiversity in sustainable city development. It has contributed to the local economy, raised awareness, fostered community relations, tapped into traditional knowledge, and protected green spaces.

130 ICLEI Case Studies April 2011

Abstract

In 2008, Chiang Rai municipality established the Urban Biodiversity towards Sustainable City and Climate Change Resilience project (UBD-SCCCR). The main goal was to develop the city in a sustainable way by conserving its natural areas while using them as a carbon sink, particularly a forested tract of land called Doi Saken. The project has already revived flora and fauna within the city, provided exhibitions, a natural study area, and a local biodiversity curriculum for students, as well as contributed to establishing a nursery greenhouse for local plants. The project aims to understand the role biodiversity plays in the community by collecting local knowledge. Stakeholders from government, private and educational institutions, as well as community organizations were engaged in finding approaches to better utilize and conserve public green spaces within the city. The municipality has expanded this project to other areas such as Doi Phra Baht, and Nong Pung Reservoir by using similar concepts and processes.

Population / Land area
~ 70,000 / 61 km^2

Municipal budget
Approx. US$ 11 million (2009)

Co-benefits of urban green spaces

The sensitive ecosystem in and around Chiang Rai is under severe pressure from development and a rapid growth in tourism. These natural spaces are important for many reasons. Firstly, during long weekends, urban residents often leave the city to visit natural areas. Natural spaces can serve as recreational areas. Secondly, Thai cities often have below standard green space for their residents (the standard is 4 m^2 per capita), while air pollution is often severe. Green spaces, such as parks and forests, can act as a "green lung" and contribute to carbon sequestration. Thirdly, many urban people still depend on raw materials for daily consumption; for example, edible insects, local vegetables, and herbal plants used for medicine. The government also has a strong and clear policy on promoting community-based economic activities based upon existing natural resources. Rich urban biodiversity sources are valuable to communities in providing raw materials for consumption and sale. Fourthly, schools with environmental curricula can arrange study trips to nearby districts and provinces to reflect upon indigenous knowledge and local contexts. The wider public can also learn about the environment. Fifthly, natural spaces feature prominently in local norms, cultures, traditions and indigenous knowledge. Certain objects found in nature, such as trees, rivers and forests are considered as sacred.

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Case Study

City context

Chiang Rai municipality is located in Chiang Rai province, the northernmost province of Thailand in the Kok River Basin, and serves as a gateway to the Mekong River sub-region. The population of Chaing Rai municipality is approximately 70,000, divided into 62 communities. The urban center serves as the main business area and is the location of government agency buildings. The suburbs are mostly agricultural and residential. The main economic activities are tourism, agriculture, and commercial services.

Credit: Thailand Environment Institute

Overview of Chiang Rai Municipality.

Doi Saken urban forest is located in Chiang Rai municipality. The forest covers an area of approximately 75 rai (or 12 hectares). The area is hilly and covered with mixed deciduous forest. Local people draw ecosystem services and goods from the forest—some harvest bamboo, mushrooms and insects—though it is used mainly for religious and recreational activities. The forest contains a pagoda, Kirichai temple, which monks visit temporarily.

The site falls under the Forest Act, B.E. 2484 of 1941. Previously, it was under the responsibility of Muang Chiang Rai District. It is now the responsibility of the Chiang Rai Municipality, under the jurisdiction of the Royal Forest Department.

The Royal Forest Department assigned the head of Kirichai Temple the responsibility to take care of the surrounding area with the "Temple Assist Forestry Works" project. The temple cooperated with the Royal Forest Department and Chiang Rai Municipality to develop the area around the pagoda. Various activities were carried out (eg. tree planting, road construction, and fencing).

Doi Saken's management plan for urban forest biodiversity inventory

The Chiang Rai municipality implemented activities under the Doi Saken forest management project to promote awareness and understanding of conservation. For the protection of Doi Saken's natural resources, appropriate management plans were developed through the participation of stakeholders at all levels.

The procedure for developing these plans went as follows:

Step 1: Conducted a meeting with representatives of multiple stakeholders in order to improve knowledge and understanding of the value of Doi Saken forest biodiversity.

Step 2: Established voluntary working groups to study the biodiversity of Doi Saken forest. The participants consisted of representatives from the Doi Saken community, academics, experts from governmental agencies such as

the Department of Forestry, local media, and representatives from Chiang Ray municipality. The total number of participants was 24.

Step 3: Conducted a training program on biodiversity survey techniques and data collection approaches for the working groups. The training program included the design and planning of on-site surveys for each study area.

Step 4: Alocated the project budget (US$ 500) for the biodiversity survey process. The working groups were authorized to manage the budget themselves with independent inspection.

Step 5: For the Doi Saken biodiversity data collection effort, three survey groups were formed, each surveying either flora, fauna or edible insects. Each working group used different techniques and data collection processes.

Credit: Thailand Environment Institute

The working group and relevant stakeholders were listening for project details and activities.

Step 6: Each group collected and documented biodiversity data and developed suggestions for improved conservation and how to best benefit from the biodiversity survey information.

Step 7: The results of the survey were presented to the municipality, government agencies such as the Provincial Natural Resources and Environment Office etc. and related stakeholders to inform biodiversity conservation and development planning. The purpose was to actively involve the administrators in the annual planning for the municipality.

Results and impacts of the project

The UBD-SCCCR project has contributed to the sustainable development of Chiang Rai City by addressing the economic, social and environment issues listed below:

Local economy. The majority of people living around Doi Saken are farmers and local traders. The project operation has helped these residents generate additional revenue from tourism, in both direct and indirect ways. Several innovative income generating activities were created; for instance, making slingshots with plant seed bullets, offering home-stay visits to tourists, and selling plant sprouts.

Awareness raising. The Chiang Rai municipality promoted the project through the media. Many governmental agencies, actors within the private sector, and local municipalities became interested in the project. This attention increased the number of visitors to the area.

Credit: Thailand Environment Institute

Youth participated in data collection and interviewed elder people to understand the history of the project area.

Community relationships. In the past, few people in the community took actions to conserve the forest. After participating in the project, more parties have become involved and supportive, each taking on a more cooperative attitude in working together.

Traditional knowledge. The project has provided opportunities for the elderly

Credit: Thailand Environment Institute

Flora survey in Doi Saken project site.

to participate and contribute to community-based activities. This has helped enable traditional knowledge to be passed to the local communities.

Green areas. Green areas, which have been on the rise, offer the public aesthetic relief and recreational opportunity. Large areas of the forest can also act as carbon sinks for the city and support biodiversity. The forest also provides food resources for the communities, including edible insects, which are a source of protein.

Lessons learned

The urban forest serves as a biodiversity learning center, providing opportunities for youths and the general public to understand and appreciate the value of natural resources and ecosystem services. Conservation and protection of urban forests is a win-win, cost-effective way to increase the awareness of the public and maintain healthy ecosystems. It also revitalizes traditional cultural and religious values connected to nature.

Re-positioning of local municipality. Chiang Rai municipality, the main organization responsible in the area, has changed its position from an implementing agency to one of advocacy and coordination. It plays this role among multiple stakeholders and networks. As a consequence, the municipality has learned to balance governmental influence with stakeholder participation. The project has resulted in a perceptional change among city executives and managers. Environmental issues and ecosystem impacts have been included in the decision making process in the development of community plans.

Credit: Thailand Environment Institute

The local people take the naturally fallen beehive for their own consumption.

Stakeholder participation. All stakeholders had some opportunity to take part in the projects; eg. in human resource management, budget planning and workplan development. This maximized limited resources and contributed to a feeling of sharing ownership of ther project.

Learning to work in multi-party processes. The interaction among multiple stakeholders in the diverse working groups enabled participants share new ideas and experiences with each other while learning how to manage conflict. This built trust and a more effective working atmosphere.

Replication

The UBD-SCCCR project was a novel instrument for municipalities in Thailand. As such, the project serves as a helpful model for biodiversity conservation for other municipalities, both in Thailand and in other countries. Previously, Chiang Rai municipality set a target to extend the project to at least another two locations: Doi Pra Bath forest and Nong Pueng area.

There is a plan for reconstructing a building to be a new "Biodiversity Conservation Learning Center of Chiang Rai Municipality" as 2010 was the international year

of biodiversity in Chiang.

Rai municipality's project received considerable attention from the international community. In August 2010, the representatives of Chiang Rai municipality were invited by the Office of National Resources and Environmental Policy Planning (ONEP) to share their best practice experiences with other municipalities at the 3rd Thailand Natural Resources and Environment Conference under the topic "Biodiversity: Saving the World's Life". This suggests that the ideas and principles contained within the UBD-SCCCR project are transferable to other cities across the world.

Budget and finances

Chiang Rai municipality initially received funding for the project from KNCF through the Thailand Environment Institute's project "Enhancing Urban Biodiversity in Thai Cities". This grant was managed by the knowledge development and capacity building arm of the local project implementing agency. For meetings to report on project progress and to fund the biodiversity survey, a total of 15,000 Thai Baht (approx. US$ 500) was spent.

In the following year, the project was subsidized by the Thailand Business Council for Sustainable Development (TBCSD) to establish the Doi Saken biodiversity conservation center, for a total of 92,000 Baht (approx. US$ 3,000).

To maintain activities and the biodiversity conservation center, the municipality contributed 15,000 Baht (US$ 500) in 2009, and increased it to 250,000 Baht (approx. US$ 8,400) in 2010, not only for Doi Saken, but also for other urban biodiversity areas in the municipality.

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Local Action for Biodiversity

The Local Action for Biodiversity (LAB) program is a global urban biodiversity program coordinated by ICLEI - Local Governments for Sustainability´s Global Biodiversity Centre, in partnership with the International Union for Conservation of Nature (IUCN). The LAB Pioneer program began in 2006 with a selected group of local and regional authorities from around the world, representing over 54 million citizens. The program provides an accessible and enabling platform for committed, leading local governments from around the world. This is achieved by profiling and promoting the importance of urban biodiversity and the role of local governments in its management, as well as by sharing the experiences, successes and challenges of urban biodiversity management in the participating cities and local authorities.
ICLEI provides guidance in assessment, planning and implementation; strategic networking opportunities; profiling opportunities for the participating local authorities at global and regional events; and creates a platform for local authorities to contribute to global advocacy on biodiversity issues.
www.iclei.org/biodiversity

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