

SUMATRAN ORANGUTAN AS A FLAGSHIP FOR CONSERVING BIODIVERSITY AND PARKS: LESSONS LEARNT FROM NORTH SUMATRA CONSERVATION AWARENESS PROGRAMMES

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ABSTRACT

Conservation International (CI) in Indonesia has developed three conservation awareness programmes since 1995; two programmes are still running, while one was discontinued due to funding issues. These conservation education programmes are part of a long-term plan by CI to prioritize large-scale efforts to conserve biodiversity in Indonesia by pulling together various stakeholders and partners. Through partnerships with local non-governmental organizations, the government, universities, the private sector and other donors, environmental education programmes can be sustained. Successes in terms of the conservation of flagship species have been achieved in some areas. For example, the Sumatran Orangutan *Pongo abelii* Lesson was used as a flagship species in education programmes at the Sibolangit Interpretive Centre. However, in local forest communities the use of the flagship-species approach was perceived to be effective only in conjunction with raising awareness of ecological services. Discontinuation of the Sibolangit Interpretive Centre occurred due to a lack of donor support, as has been the case for many conservation education programmes in Indonesia. Nationwide, few public awareness programmes focusing on species have endured and proven effective without relying on donors. A key to the success of the surviving programmes is engagement with a variety of partners that provide various skills, funding opportunities, and resources.

Keywords: Awareness programmes, conserving biodiversity and parks, Indonesia, orangutan.

INTRODUCTION

Globally, conservation awareness-raising has often been embedded within environmental education at the primary, secondary and tertiary levels of the formal education system, as well as within extra-curricular activities for children and adult education programmes. These activities include any type of educational programme about nature, wildlife and the environment with the underlying goal of developing the following outcomes: an appreciation for nature, knowledge of nature or participation in activities related to the protection of nature. These programmes aim to increase awareness and alter behaviour to contribute to conservation and decrease environmental destruction resulting from human practices. Although conservation education alone will not solve all environmental problems, effective education and communication programmes are a prerequisite for better natural resource manage-

ment and, ultimately, for safeguarding the biosphere on which we all depend (Jacobson, 1995).

Indonesian environmental education programmes began in the late 1960s, mostly in schools, and gained momentum when the Government of Indonesia established the Ministry of the Environment in the early 1970s. Initiatives to educate Indonesians about the environment have mostly been embedded in curricula, biology books and related activities, such as nature clubs, at many universities. Non-governmental organizations (NGOs) have played a significant role by either developing conservation centres in or near parks or by proactively working with schools to develop the necessary biodiversity conservation content for their curricula (Indrawan et al., 2007; Supriatna, 2008).

Although public environmental education is not a new idea, it has previously had only a small-scale and

short-term impact in Indonesia. The oldest environmental education facility is the Seloliman Forest Centre in East Java, which brings together students, educators, farmers, governments, businesses, women's groups and the general public to learn about the environment. Courses at Seloliman have included seminars to promote the integration of environmental education into school curricula, and workshops for local villagers to learn skills for environmentally friendly living. This centre is not only the oldest in Indonesia, but it has received many awards for successfully educating a wide range of stakeholders in environmental issues.

In 1995, World Wide Fund for Nature (WWF) Indonesia created an environmental awareness programme that departed from other such initiatives through a special project that included motor vehicles equipped with films and flyers for school children, communities and stakeholders in forested areas, such as national parks and other protected areas (WWF Indonesia, 2014). Another NGO, Conservation International (CI), initiated similar programmes in three locations in 1996. The first was Bodogol Conservation Education Centre (BCEC) in the Gunung Gede Pangrango National Park near Bogor, West Java, which is south of Jakarta, the capital city of Indonesia (Ario & Supriatna, 2015). The second was the Sibolangit Interpretive Centre (SIC), which was established in North Sumatra Province as an anchor for conserving parks and biodiversity over large areas, such as the Leuser Ecosystem (2.3 million ha). The third programme was located in the marine and coastal areas of Raja Ampat in West Papua. This programme continues to this day and utilizes a large ship called 'Kalabia' which means 'shark' in the local language, as a mobile classroom on the water.

In North Sumatra, CI awareness programmes were focused on saving parks that support the Sumatran Orangutan. The Sumatran Orangutan is one of the six closest relatives of humans, and is rapidly moving toward the brink of extinction (Rijksen, 2001). The Sumatran Orangutan population is concentrated in the northern part of the island, in the North Sumatra and Aceh provinces. There are several small parks in North Sumatra and Aceh between 1,000 and 10,000 ha in size, such as Dolok-Sipirok Protected Area (6,970 ha), Sibual-buali Protected Area (5,000 ha), Jantho Protected Area (8,000 ha), and only one large park, Leuser National Park, of 1.1 million ha (Supriatna et al., 2001). Sumatran Orangutan is found only in part of Leuser National Park and a few small protected areas in North Sumatra. Loss of natural habitat and poaching are the most significant factors contributing to the reduction of orangutan populations in North Sumatra. With current

estimated rates of logging, habitat loss and the associated removal of orangutans, results from a Population and Habitat Viability Analysis (PHVA) indicated that only populations of 6,600 or more orangutans showed long-term viability, and that high logging rates of 10-20% annually will quickly drive populations to extinction (Singleton et al., 2004; Utami & van Schaik, 2010).

CI programmes on conservation awareness have been using 'flagship species', a term applied to a popular, charismatic species that serves as a symbol and rallying point to stimulate conservation awareness and action (Heywood, 1995). All the advantages of using flagship species may be reinforced by appropriate marketing that successfully enhances or highlights the species' charisma to serve a conservation campaign (Bowen-Jones & Entwistle, 2002). One notable example is the rehabilitation of the image of the Komodo Dragon *Varanus komodoensis* Ouwens, which used to be feared and hunted by local populations, but has become a strongly charismatic and even emblematic species for both local populations and tourists thanks to an ambitious conservation programme (Walpole & Leader-Williams, 2002). Many other species have been 're-designed' as charismatic species by such programmes.

In this paper, we review the CI conservation awareness initiatives that focused on educating the communities living in forested areas around parks, and used wildlife species as flagships, in SIC in the Sibolangit Nature Reserve of North Sumatra. The programmes were considered successful for a while, but have now stopped due to no further donor support. We analyze the awareness-raising activities in North Sumatra and compare them with the CI programme in West Java, and draw lessons for future environmental awareness programmes in Indonesia.

Programme Development of Sibolangit Interpretive Centre, North Sumatra

From 2001 to 2004, with funding from the Critical Ecosystem Partnership Fund (CEPF) and in partnership with the local office of the Ministry of Forestry, CI developed SIC, which was located approximately one hour's drive from Medan toward Berastagi. SIC used the Sumatran Orangutan as its flagship species to increase public awareness about natural resource management and biodiversity conservation. The centre was situated on the main road between Medan and Lake Toba in central North Sumatra near a large lake formed by the eruption of a super volcano (Fig. 1). It focused on conservation education and raising



Fig. 1. Sibolangit Interpretive Center, Leuser National Park and Batang Toru Protected Area.

public awareness within the communities surrounding Gunung Leuser National Park (Perbatakusuma et al., 2009).

SIC's staff was supported by volunteers from the surrounding communities, all of whom had undergone intensive training in nature interpretation. To reach audiences who otherwise might not have had the opportunity to learn about orangutan conservation, CI also operated the Orangutan Mobile Education Unit, which took the conservation message beyond the gates of Sibolangit to remote areas. These areas included villages of refugees from the Aceh Tsunami of December 2004 that had been created within the national park.

From 2005 to 2007, additional funding from USAID and a private donor was secured allowing the mobile unit to expand its coverage to West Batang Toru. The mobile unit travelled to remote villages and camped

out for 3-4 days with regular return visits throughout the year. During visits, the CI team conducted informal learning sessions ranging from school visits and puppet shows to interactive games and daytime forest walks. The mobile unit was warmly received by local communities and was very effective in raising awareness among its target audiences. It reached villages and refugee camps in regencies in North Sumatra, and hundreds of people attended each session, particularly a popular, evening 'orangutan film series' (Fig. 2). The Mobile Education Unit was an integral part of conservation education and awareness-raising work in North Sumatra, and it also provided an important entry point for reaching local decision makers.

Interpreters play a very important role in conservation education and awareness-raising throughout the world, and through them, the public comes to under-



Fig. 2. The mobile unit.

stand nature and its role in supporting their livelihoods. Interpreters have the skill to communicate and translate the technical facets of the environment and its interactions to non-scientist audiences in a clear and comprehensible manner. Thus, good interpreters are a key component of successful conservation education and awareness programmes. Training materials for interpreters in this programme included the basics of ecology for nature guides or interpreters, conservation games, the basics of nature interpretation, communication for nature guides and interpreters, flora and fauna identification, jungle survival, and practice in the field.

As part of developing the education and awareness programme, the level of knowledge about orangutan conservation in the area surrounding Gunung Leuser National Park was assessed. Surveys were undertaken to evaluate the knowledge level, attitudes and behaviours of the community to provide a foundation for developing a targeted campaign strategy. The surveys were conducted in three sub-districts (Bohorok, Sibolangit and Tiga Lingga) bordering on or in proximity to orangutan habitats. There were a total of 360 respondents, 48 of whom were the formal and informal

leaders of their communities. In addition to the surveys of communities, we conducted an assessment specifically designed to evaluate the knowledge, attitudes and behaviours of the decision makers (Perbatikusuma et al., 2009).

The survey results suggested that the communities in the sub-district of Tiga Lingga (Fig. 1) had the lowest level of knowledge about forests, orangutans, and the relationship between the two, even though the area is the nearest to orangutan habitat. In most of the study areas, the decline in clean water (both availability and quality) was the most important concern for the people interviewed. Most of the respondents identified their immediate welfare as their first priority, with forest destruction and orangutan conservation as a lesser concern.

Based on the responses from the target groups, three categories of educational activities were developed. The first category specifically targeted adult members of the general public, including the refugees in the park. It included the creation of illustrated informational materials in the form of fact sheets and posters, the production of sermon sheets, the devel-

opment of information boards for the local cafe, and movie sessions and discussions. The sermon sheets were pages with information on the environment and biodiversity conservation, which were developed by the programmes in collaboration with priests and given out during Sunday prayer. SIC and the mobile unit staff also collaborated with partners to produce and distribute additional materials, such as video news releases, posters, T-shirts and a variety of souvenirs such as orangutan dolls.

From our present review of these two parallel programmes, SIC and the mobile unit team, in and around North Sumatra forests, we postulate that increasing public awareness of the important environmental services (e.g. watershed protection, erosion control) that forests provide may have been a key contributor to an observed slowing of illegal logging by smallholders in those areas visited by the mobile unit team (authors, personal observations), although data is lacking. Most of the content offered in both activities fitted with the idea of ecosystem services. In addition, appreciating how the survival of orangutans in Sumatra was linked to the forests in which they live, enabled communities and decision-makers to understand the importance of reducing further loss of habitat through cessation of logging or conducting habitat restoration, and through providing alternative livelihood opportunities for local communities.

Lessons learnt from the Conservation Awareness programmes

Conservation education and awareness-raising focused on flagship species is not new, but conducting this with a range of tools, as in this example, has not been carried out by many national or international organizations in Indonesia. Many organizations in Indonesia (WWF, CI, Birdlife International, Wildlife Conservation Society) have conducted conservation education programmes using charismatic flagship species. Such campaigns have commercial, ecological, promotional and practical advantages. The first advantage regards public communication, and the recognition that using a sympathetic or 'charismatic' symbol for conservation issues can generate interest and motivate public action for conservation (Lorimer, 2007).

In addition, using animals that are already recognized as sacred or traditionally symbolic can significantly increase cooperation of local populations and their willingness to respect restrictions and constraints that may be imposed by the conservation programme (Bowen-Jones & Entwistle, 2002; Schlegel & Rupf,

2010). It can also facilitate environmental education. In the case of our programme at BCEC in West Java, the Javan Hawk-eagle *Nisaetus bartelsi* (Stresemann) ('Garuda bird') was selected because it is a widely-understood symbol of Indonesia, while the Javan Gibbon *Hylobates moloch* (Audebert) was chosen because it is among the most 'cute and loveable' animals in the area (Supriatna & Ario, 2015).

One consideration in selecting flagship species regards the scope and definition of flagship species: if one defines it purely as the 'symbolic construct of a marketing campaign' without any consideration of other values such as the species' role in the ecosystem (Verissimo, 2011), then charisma is likely to be the only parameter used to select a flagship species; the only aim of such an application is to maximize the generosity of potential donors for conservation in general (Walpole & Leader-Williams, 2002). In this case, the flagship is no more than a mascot, which must embody the entirety of the biodiversity crisis at a given scale (the panda – in the logo of WWF – being a major symbol of worldwide biodiversity). It need not be a keystone or umbrella species, nor even endangered (Walpole & Leader-Williams, 2002).

Why were flagship species used, and, in particular, why (at SIC) Sumatran Orangutan? Sumatran orangutan acted as an umbrella for all other forest species. It has been regarded as a flagship species that can raise conservation awareness to ensure survival of the forests that contain many other organisms (Utami & van Schaik, 2010). In Sumatra, many communities already knew that the habitat of the Sumatran Orangutan had decreased rapidly due to habitat conversion for commercial and subsistence agriculture, logging, open pit mining, forest fires, infrastructure development, local encroachment and many other factors. Sumatran forests were undergoing the highest rate of conversion in the world (Rijksen, 2001; Supriatna et al., 2002; Wich et al., 2008; Singleton et al., 2009), causing a loss of orangutan habitat.

Support for conserving Sumatran Orangutans has been very high among people outside Sumatra but this was not the case with North Sumatra villagers. In some cases, protection of orangutans in the forest may not have been the villagers' concern, therefore, we had to put emphasis on the key environmental services (e.g. watershed, erosion control) that forests provide as a way to slow illegal logging and, ultimately, conserve orangutans. Thus the effectiveness of the flagship species approach per se was limited in these communities without a connection to their direct wellbeing. It is

clear that without efforts to reduce fragmentation and link orangutan populations, continued habitat loss and losses to poaching will soon drive this species close to extinction. To counteract this threat, local communities must recognize the importance of the species and the forests in which they live (Conservation International Indonesia, 2007).

From our awareness-raising activities in both North Sumatra and West Java the success of the awareness programmes has depended on how the programmes have been set up: especially financial management. The awareness programme in BCEC, West Java used a collaborative financing strategy, in which all partners helped to develop a business plan and raise the money together; it was not dependent on particular bilateral or private donors. In North Sumatra, however, the programme was heavily dependent on two donors, CEPF and USAID. Once those two donors pulled out the programme stopped suddenly. At the end of 2004, a huge earthquake and tsunami hit Aceh Province, just a few hundred miles north of SIC, and many donors changed their priorities toward relief programmes. Thus the North Sumatra conservation awareness programme was discontinued due to a lack of donors, and CI's programme in Sumatra was also changed toward post-tsunami relief projects.

In the case of BCEC in West Java, because of the sustainable financing mechanism the programme continues until now. It features several packages for multi-day visits, which include programme fees, tickets, insurance, interpreters, accommodation, welcome drink, meals and transportation. The cost for these ranges from US\$20 to \$50 per person, and encompasses tailored themes for research tourism, family gatherings, 'outbound fun' adventure tourism, family camps and others. These tourist programmes not only promote conservation education, but also provide employment opportunities for members of communities around the park, providing food and transportation to visitors or working as field staff and interpreters.

The comparison of the two different models indicates that a conservation awareness programme will ultimately only be successful in the long term if it is supported, now and well into the future, with enough funding, either through donations or a financing model that raises funds from visitors, or a combination of both. A summary of the two conservation programmes is presented in Table 1.

SIC, which depended on donors rather than income from visitors and participants in its programs, was terminated in 2005 after CI handed it over to a local

NGO. Unfortunately, the local NGO was unable to raise enough funding to sustain the education and awareness programme, after CI was able to give it support for just a one-year extension.

A number of educational methods were used, including fact sheets, posters, displays, and Powerpoint presentations, along with several editions of sermon sheets to promote the importance of protecting species and nature from the perspectives of both Islam in West Java and Christianity in North Sumatra. Each of these awareness-raising activities was preceded by an awareness needs assessment of the general public (including refugees in the park in the case of North Sumatra) and key decision makers such as local government officers and conservation officers.

The flagship species approach can only successfully reach larger audiences if it is set up by collaborating organizations with the respective park organization and local or indigenous organizations. Creating alliances requires building awareness and creating incentives for people to support conservation efforts. Creating such alliances, and disseminating information to people around parks and decision makers and to participating communities generally, have been used by CI Indonesia in the two examples reviewed here. These conservation education programmes have been successful in helping people understand the importance of ecosystems, the species in them and their role in livelihoods in West Java and North Sumatra.

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Table 1. Summary of conservation education and awareness programmes initiated by Conservation International in North Sumatra and West Java, Indonesia.

	North Sumatra	West Java*
Location	Sibolangit Tourism Park, Leuser National Park	Gunung Gede Pangrango National Park
Target audience	Communities around the Park and students from the city of Medan	Communities around the park, invited students, paying visitors and family gatherings, and people from the cities of Bogor, Sukabumi and Jakarta
Partner organizations	Conservation Office (BKSDA), CI, local NGOs, USAID	National Park, CI, local NGOs, Private sector
Outreach	Sibolangit Interpretive Centre (SIC) and villages around the Orangutan habitat. Plus a radio talk show series discussing conservation and other related topics, and radio spots or Public Service Announcements on conservation	Both at Bodogol Conservation Education Centre (BCEC) and people around the park
Flagship species	Sumatran Orangutan	Javan Hawk-eagle and Javan Gibbon
Equipment	Digital and film documentation and also working with the church and Muslim leaders	Digital film and working with Muslim boarding-school leaders
Infrastructure/ Vehicles	In the Park: SIC (1 office house, 1.5 km trails, several gazebos) Outside the Park: With 2 vehicles (4WD SUV and medium-size bus) travelling to villages and schools and churches around Leuser National Park and Batang Toru Forest	In the park: BCEC (2 rooms with 40 bunk beds, 1 class room, volunteer house, staff house, guard house, 2 gazebos, restaurant, canopy bridge, 2 km trails) Outside the Park: Working with Ford Company (SUV), travelling from school to school around the park, Islamic boarding school, villages around Gunung Gede Pangrango National Park
Funding	Critical Ecosystem Partnership Fund (CEPF), World Bank GEF and USAID	Collaborative partnership (park budget, local and international companies, sale of tickets, programme packages), Keidanren Foundation from Japan, companies (Mattel), and entrance fee and programme packages
Educators	CI staff and occasionally with park rangers at SIC. Two motor vehicles travelling with 3-4 crew went to several villages in the buffer zone of Leuser National Park	CI staff in collaboration with University of Indonesia, volunteers from NGOs and Park authorities developed education modules, flyers and digital information together
Duration	2001-2004, extended until 2007	1998 to present
Tag lines or Programmes	'Save the Orangutan'	'Discover the Secret of the Rainforest', 'Forest the Food Supplier', 'Forest, the Drug Store', and 'Life in the Canopy'

*from Ario & Supriatna, 2015

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