

**PROMOTING FROG CONSERVATION THROUGH
ENVIRONMENTAL EDUCATION AND RESEARCH EXPERIENCE:
pilot project in West Java, Indonesia**

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Abstract : Most people in Indonesia have very little awareness of the need to conserve amphibians and reptiles. The aim of this project was to promote frog conservation for school children in Bogor, West Java, Indonesia. Five local schools (three primary schools, one junior school and one high school) participated in this program. The main objective of this program was to foster schoolchildren's understanding about the importance of frog conservation. This program consists of two phases: (a) a survey to reveal schoolchildrens' perceptions of frogs, and (b) a campaign to increase awareness of the economic and ecological importance of frogs, and the need to conserve them. We developed frog campaign material, such as slide shows and printed notes, to be used during the pilot awareness project. A three-day workshop for nine teachers from five participating schools was also conducted. This workshop introduced teachers to the diversity, natural history, status, and conservation of Indonesian frogs. To increase the interest in research activity involving frogs by more motivated high school students, five students were involved in field work in the river systems of Cilember Forest Reserve, West Java.

Keywords: children perception; education outreach; frog conservation; Indonesia

Kampanye konservasi katak melalui pendidikan lingkungan dan partisipasi dalam penelitian: pilot proyek di Jawa Barat, Indonesia

Abstrak : Katak merupakan salah satu hewan yang kurang dikenal di Indonesia. Tujuan dari kegiatan ini adalah untuk meningkatkan kesadaran masyarakat akan konservasi katak terutama anak-anak sekolah dan para guru. Kegiatan ini dilaksanakan di Bogor, Jawa Barat dengan mengikuti sertakan lima sekolah (tiga sekolah dasar, satu sekolah menengah pertama dan satu sekolah menengah atas). Kegiatan ini terdiri dari dua program: (a) survei untuk mengungkapkan persepsi anak sekolah terhadap katak, dan (b) kampanye peningkatan kesadaran akan pentingnya katak dari segi ekonomi maupun ekologi. Kegiatan meliputi pembuatan materi kampanye katak seperti slide-



show dan kertas kerja untuk digunakan dalam program pendidikan lingkungan. Sebuah lokakarya tentang bioekologi dan konservasi katak juga dilaksanakan bagi sembilan orang guru sekolah yang terlibat. Untuk meningkatkan minat anak sekolah terhadap kegiatan penelitian, lima orang murid sekolah menengah atas turut berpartisipasi dalam penelitian katak selama dua malam di Wana Wisata Cilember Jawa Barat.

Kata kunci: Bogor, kampanye, konservasi katak; penyuluhan, persepsi murid sekolah

INTRODUCTION

Frogs have gained attention elsewhere in the world, especially with recent findings that there is a worldwide decline of amphibians, but are poorly understood in Indonesia. To promote frog conservation a pilot project was carried out in Bogor, West Java Province in Indonesia. However, before we carried out the project there was a need for us to understand the values of children toward frog conservation because it is values that affect human behaviour toward the natural world. Therefore, we firstly undertook a survey to reveal schoolchildrens' perceptions of frogs, after which educational intervention was given to increase childrens' conservation awareness.

PARTICIPANTS

Six schools were intially approached to be involved in this program, although only five schools participated. The schools chosen represented a cross-section of wealthy, middle-class, and poor neighbourhoods. A total of 195 students ranging from 4th Grade to 11th Grade were assigned a set of questionairres before any educational intervention was commenced. The name of each school and the number of children participating in this project is shown in Table 1.



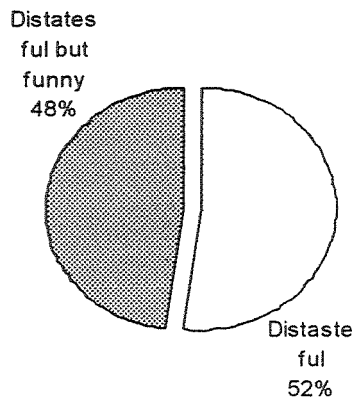
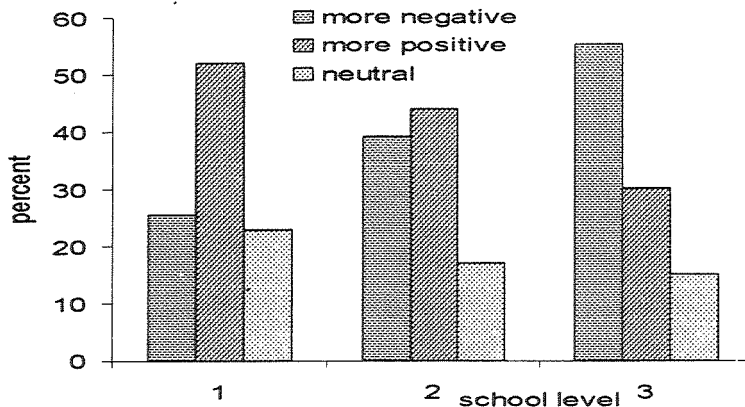
Table 1. The number of children involved from each participating school

Name of School	Grade	Total number of children participated
SDN Taman Sari 01	Primary school (4-6)	42
SDN Taman Pagelaran	Primary school (5)	32
SD Polisi 4	Primary school (4-6)	40
SLTP Rimba Teruna	Secondary High School (7-8)	41
SMUN 1	High School (11)	40

A questionnaire in Bahasa Indonesian was constructed to meet the childrens' ability to understand the questions and answer truthfully. The questionnaire consisted of a total of 17 questions to gather information such as (1) Basic information: age, gender, school and home location, (2) Childrens' perspectives on frogs; such as respondent's knowledge and perception of frogs and understanding of frog/human relations, (3) Respondent's understanding of conservation.

PERCEPTION TOWARD FROG CONSERVATION

A choice of twelve words to describe frogs was given to children from Grades 4-9. Six answers related to negative feelings (lazy, poisonous, scary, dangerous, distasteful and dumb) and six others related to positive attitudes (playful, likeable, like to sing, smart, interesting, funny). Children could choose more than one word. We asked high school students to describe frogs using their own words. We then pooled the answers into a) negative (more than half of the chosen words contained negative feelings), b) positive (more than half of the chosen words contained positive feelings) and c) neutral (equal between positive and negative feelings). Interestingly, primary school children showed more positive attitudes to frogs than secondary and high school children (Figure 1).



Note: 1= primary school; 2 = secondary school; 3 = high school

Figure 1. Childrens' perceptions toward frogs

Based on Figure 1, most children described frogs as either 'funny' (positive) or 'distasteful' (negative). Interestingly, the percentage of children who viewed frogs as 'distasteful' was only slightly bigger (52%) than children who chose 'distasteful but funny' (48%).

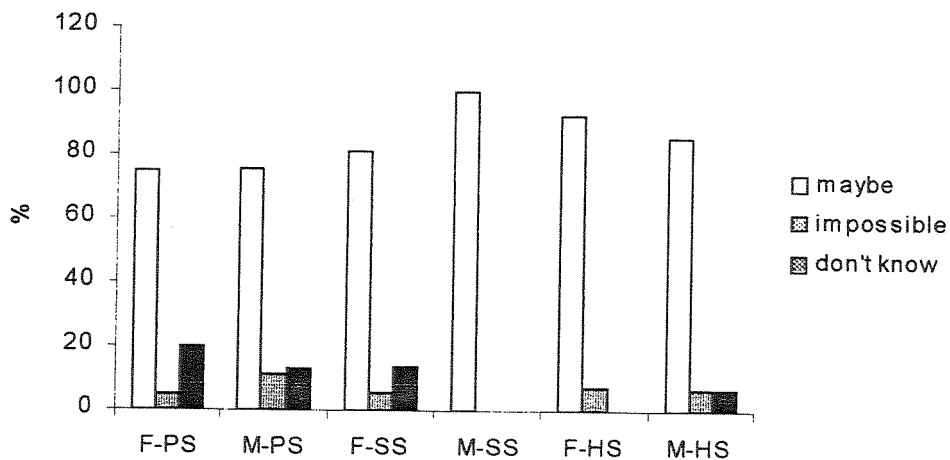
Most children undoubtedly knew about frogs, either from stories told by their elders or through school curricula. However, when asked whether they learned about frogs at school we found a very ambiguous result. Most primary school children said 'yes', but most secondary students said 'no'. It was assumed that high school students already learn about



frogs before so we did not ask them. Most primary school children (82.5%) had heard stories related to frogs. Almost all children had seen frogs (>95%), however, less than 50% had ever held or touched frogs.

Two thirds of secondary and high school children knew the feeding habits of frogs, however, less than half the primary school children knew what kind of food frog ate. Less than half the school children (all Grades) knew that some frogs are edible, and almost all school children could draw the frog life cycle correctly.

We asked them what would happen if they were given frogs. Most children answered that they would release the frog into the wild. Most children also thought that we need to protect frogs, although most of them did not really know whether Indonesian frogs are declining or not (see Figure 2).



Note: F-PS = Female Primary School, M-PS = Male Primary School, F-SS = Female Secondary School, M-SS = Male Secondary School, F-HS = Female High School, M-HS = Male High School. N total = 195.

Figure 2. Answers related to the question, 'Do you think that Indonesian frogs are declining?'



EDUCATIONAL INTERVENTION

Intervention consisted of one lesson conducted in class by a team member. The lesson was designed to include elements of affective, or empathy based, and cognitive, or factual, learning. We developed a 45 minute slide program consisting of information about frog biology and conservation. The slide program also showed several species of frogs that can be found easily in West Java. Afterwards we held a discussion. Children were put in separate groups and in each group we assigned a tutor. We also brought some specimens, dead and alive (in a small terrarium), so children could touch and look at frogs.

TEACHERS' WORKSHOP

A three day workshop on the ecology and conservation of frogs was conducted at Bogor Agricultural University from 31 March – 2 April 2003. Although we invited two teachers from each participating school SMUN 1 only managed to send one, so the total number who attended the workshop was nine.

The workshop syllabus covered topics such as global amphibian decline, biology of amphibians, using the Internet to search for information related to amphibian conservation, identifying amphibians and how to implement frog conservation information into teaching. The workshop also included a visit to the Museum of Zoology, Bogor where the teachers saw amphibian specimens from around Indonesia and also learned to make specimens. Participants also spent one night catching frogs around the university wetlands, during which they caught seven species of frogs.



HIGH SCHOOL STUDENT PARTICIPATING IN FROG RESEARCH

The original number of high school students participating in this program was supposed to be two. However, more students asked to be involved in this program. Therefore, six high school children from SMUN 1, Bogor were chosen to participate in our research. Only five students were able to participate because one student could not get parental consent.

The program was conducted in 17- 19th April 2003 as part of our monthly frog sampling in Cilember, West Java. During the day, we surveyed the area before the night survey. The night survey began around 8.00 p.m and finished around 12.00 p.m. Sampling was carried out for two consecutive nights. Because the program in Cilember actually occurred at the end of our 12-month program, we took some samples. The students learned how to identify frogs and how to preserve specimens. At the end of the program, the students submitted a report to the team.

FUTURE WORK

The responses from the schools involved were very positive. We are getting calls from our former high school students and teachers, to help them identify frogs that they have found in their backyard. There are also calls from a local scout leader who has heard about our program and want us to come to the scout camp and talk about frogs. Several other schools who have heard about the program have asked us if they can be involved. Madania International School in Bogor also invited us to come in early July 2003 to give a one day outreach program to their students.

Therefore, there is a need to expand the frog conservation program to other schools. We plan to do more outreach in other schools and develop more environmental education products such as posters, and brochures to increase childrens' awareness about frog conservation. We also plan to



develop a frog monitoring program around Bogor Agricultural University (BAU) campus in Darmaga and the BAU Faculty of Forestry Gunung Walat Research Station, West Java. The program will not only increase the research experience of BAU undergraduate students but will also give other people a chance to become involved in frog research.

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