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Artificial Insemination.

ELEPHANT’s WORLD Kanchanaburi

**Principles of funding**

1. The majority of elephants in Thailand live in limited groups in captivity in work camps, tourist centres or are individually owned in towns and cities. Part of the domesticated population has to be adjusted again to living in the wild because elephants in big cities are now forbidden and for work-elephants is less need in view of new laws concerning forest exploitation. The project has a high educational aspect at university level in respect of counteracting inbreeding within the present elephant populations.

2. There are no implications expected of climatic change effects on the success of the project.

3. To get the project on a sustainable, routine basis will take about 4 years.

4. The project aims at improving the genetic variation in captive elephant populations.

5. The Government of Thailand supports the project through the Livestock Department of Kanchanaburi Province.

6. The humane treatment of elephants has priority of the Government of Thailand. For example the city elephants living under very poor conditions are now being moved to rural areas with better living conditions.

7. As far as possible each elephant will be controlled by its own mahout (Caretaker).

8. The elephant breeding project is welcomed by the Government.

**Note.** The plan to improve the genetic diversity to counteract inbreeding in local populations is a long term project as elephants are only on heat every 5 years.

**Field conservation Grant Proposal Application**

a) Artificial insemination programme of domesticated elephants under Elephant’s World Project.

b) Project leader is Dr. Samart Prasithphol, Livestock Officer, Kanchanaburi Province also leader of the Elephant’s World Project.

c) Summary of **4 year budget** for the insemination project is presented at the rate of one Euro equal to Baht 42 as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Buildings and office</td>
<td>50,600</td>
</tr>
<tr>
<td>*Laboratory equipment</td>
<td>40,400</td>
</tr>
<tr>
<td>Salary veterinary officer</td>
<td>14,700</td>
</tr>
<tr>
<td>Salary of two mahouts (elephant caretakers)</td>
<td>20,600</td>
</tr>
<tr>
<td>Salary of one administrative officer</td>
<td>8,600</td>
</tr>
<tr>
<td>DNA analyses of elephants</td>
<td>38,200</td>
</tr>
<tr>
<td>*Four wheel drive pickup for carrying</td>
<td>15,000</td>
</tr>
<tr>
<td>*Insemination equipment and for fieldwork</td>
<td>25,700</td>
</tr>
<tr>
<td>Car use and maintenance</td>
<td>7,500</td>
</tr>
</tbody>
</table>
### Equipment for sperm handling  
7,500  
### Office materials  
600  
### Sundry purchases  
300  
### Project total  
Euros 229,700  
### Total sought  
Euros 229,700  
* Investment costs.

**d)** The purpose of the elephant artificial insemination project is to counteract the severe inbreeding observed in many domesticated elephant populations in Thailand by starting selection of superior male and female elephants. The project will select a small number of bulls superior in character and external characteristics (In genetic terms superior phenotypes). A greater number of female elephants will be selected on good character and excellent external characteristics (Good phenotypes). Female elephants are only every five years on heat after giving birth. Thus many females have to be selected and kept under observation if the project will have a long term effect on the genetic improvement of the domesticated elephant population. A qualified, university educated veterinary officer will be in charge of the programme under supervision of the Livestock Officer of Kanchanaburi Province. An autonomous laboratory will be established to procure and store sperm and to implement artificial insemination in remote areas. Although insemination of selected females will have priority, the effect of insemination of second choice females should also take place wherever possible to compensate for detrimental genes by improving the genetic diversity.

### Conservation Benefit

1. **a)** The measurable outcome of the project will be elephants with a kind character and exterior appearance similar to the wild elephants living in Thailand. In view of the slow reproduction of elephants the programme should last for 20 – 30 years to realize a lasting impact on the genetic improvement of the domestic elephant population.  
   **b)** The project may serve as a unique example in maintaining conservation of genetic diversity in elephant populations in other Asian countries.  
   **c)** If nothing is done, inbreeding in existing smaller elephant populations will lead to a further weakening of the species. As the majority of the elephants in Thailand live in captivity action is needed urgently. The present population of about 3,000 domesticated elephants still allows a good basis for selection of desirable phenotypes.  
   **d)** The project will continue to deliver benefits on a permanent basis as long as desirable phenotypes are crossed. The success of the project depends on course on the heritability of the various desirable traits observed in the phenotypes. The present ongoing input is the selection of superior male elephants. Two were identified. However, one died recently.

### Probability of Success

**e)** The proposed actions aim at reducing further inbreeding in small, domestic elephant populations by greatly improving genetic variability in Thailand and maybe
surrounding countries. Climate change will have little or no impact on the proposed project. The methods of genetic improvement have been widely demonstrated in other species such as horse- and cattle breeding. Pitfalls have been considered in respect of participation of owners of elephants and timely communication when an elephant is on heat to permit timely insemination. Informative education to elephant owners may overcome these problems. As the project is unique, it is not previously identified as a project to maintain the genetic diversity and eliminate the effects of the present inbreeding. Another important factor to success is the inclusion of the running costs of the elephant insemination station in the annual Government budget to ensure continuity of the project.

f) The high scientific qualifications and experience with other species of the project leaders is the best guarantee for the success of the project. The Livestock Officer of Kanchanaburi Province is already for years devoted to the well being of elephants.

g) The capacity building will come with time, when this pilot project has proven its worth and will form the training base for similar units. One insemination unit can probably not cover a big country as Thailand. The local population in Kanchanaburi has shown already its interest in the Elephant’s World Project by visits and donation of feed for the elephants. The Elephant’s World Project has already drawn much attention at home and abroad since its establishment in 2008.

h) It is anticipated that the Thai Government will take a direct interest in the programme in the near future, when it is showing its value. The elephant is the national symbol of Thailand. A degenerated elephant should never become the symbol of Thailand.

Benefits

k) The artificial insemination programme in Thailand may have an impact on maintaining genetic diversity of the Indian elephant in Australian zoo’s by using sperm of selected male elephants in Thailand. This aspect will also have an educational impact on Australian zoo visitors and students. The selected male elephants may become part of the international elephant exchange programme to avoid inbreeding.

l) Similar to the Elephant’s World Project, the proposed elephant insemination project depends very much on volunteer participation but is at the same time providing an opportunity to study and learn.

2. The budget covering the first 4 years of the project is presented under.
   At present no other funding is obtained for the moment. The following time line is envisaged, when budget permits.

Year 1.
Identification of suitable male and female elephants for breeding purposes. (Ongoing).
Construction of buildings. Appointment of staff. Ordering all equipment. Purchase of 4 wheel drive car. Improve existing vegetation near the station to provide better feed for the elephants.

Year 2.
Identification of suitable male and female elephants for breeding purposes. DNA analyses of selected elephants in Kanchanaburi Province.
Year 3.
As year 2. Insemination of elephants will start.

**Year 4.**
As year 2. Birth of first calves confirming insemination techniques. Start cooperation with interested institutions in other countries.

3. At present the status of the project is as a non profit private organization.

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- Down Chang made from selected line and insemination no less than 10 rope per annum
- Detect and troubleshoot extinct elephants of Thailand reflecting.

**The project proposer**
(Mr. Satwaphaetsamarot Prasit sujiravorakul results)
*Director of elephant conservation Centre Kanchanaburi*

**The project leader**
(Dr. Samart Prasitphol)
Kanchanaburi Provincial Livestock Office, Department of Livestock Development,
*Head of Animal Health Development Section*