

# The Adaptation of *Bo-sai Duck* Game into Local Context as part of Kindergarten Disaster Education Program in Merapi Volcano Area

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# Background

- Merapi is one of the most active volcanoes in the world, last significant eruption: in 2006
- Based on on-going project in Merapi Volcano
- Disaster education classes in 8 kindergartens based on guide book developed in the project:
  - Teacher's active involvement
  - Combining national curriculum's standard of competence for kindergarten:
    - habit, language/ verbal skill, cognitive, motor skill, art skill with hazard-related knowledge
- The intention to improve the education tools: introducing Bo-sai Duck game

# Why Bo-sai Duck?

- Several competences could be developed at once: **habit, verbal skill, motor sensor, and cognitive skill** and relevant with the **national curriculum's** standard of competence
- Fun game and appropriate for kindergarteners
- It can trigger teacher and children's creativity to create more games and contents
- Easy to understand

# Objectives

- To develop Merapi-version Bo-sai Duck and identify necessary adaptation
- To identify the lessons learned through the action of developing Merapi-version Bo-sai Duck

# Bo-sai Duck Game as a Disaster Education Tool

- Meaning:
  - *Bo-sai* (Japanese): Disaster management
  - *Duck* (English): A kind of animal, and/ or to drop-cover-and-hold
- Developed in Japan, by T. Kikkawa and K. Yamori in 2005
- Mainly targeting pre-school children
- Has been practiced in several places across Japan, such as the Hiroshima Fire Brigade, Tokyo Metropolitan Fire Brigade, and other cities in Japan
- Bo-sai Duck Game components:
  - Cards, Instructor, Participants, Game Rule

## FEATURE OF BO-SAI DUCK CARDS

Side A: Hazard

Side B: First act/ response



**Message:**

*First things first: protect your head*

**Verbal** (to be mentioned by participants):

"Duck!"

Representing **animal** for response:

Duck

**Action:**

Squat while protecting the head

# Procedure of the Original Bo-sai Duck

1. **Explain** to kids the rule of the game (about 5 minutes)
2. **Practice** the pose (about 10 minutes)
3. **Play** the game with music (about 10 minutes)

# The value of the tool compared to other disaster education tools

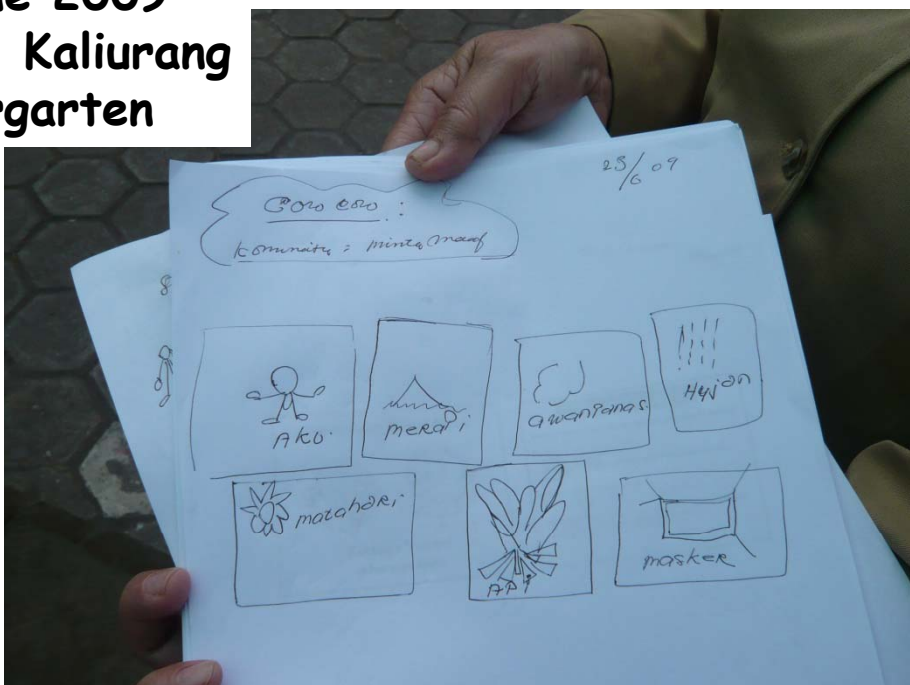
- Through this game they can practice/ get used to the “first act” response to a hazard or other concerns, not just to be aware of a hazard
- Children can get used to saying particular words/ phrase during emergency
- Includes not only the risks caused by only natural hazards, but also the risks in daily lives (e.g. crossing a street, kidnapping, etc)
- The rule of the game can be modified freely

## **Introducing Bo-sai Duck to Kindergartens in Merapi – June 2009**

- 8 pilot kindergartens (determined by the project)
- First introduction of original Bousai Duck to the teachers

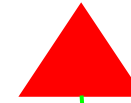


23 June 2009  
at TKN 3 Kaliurang  
Kindergarten

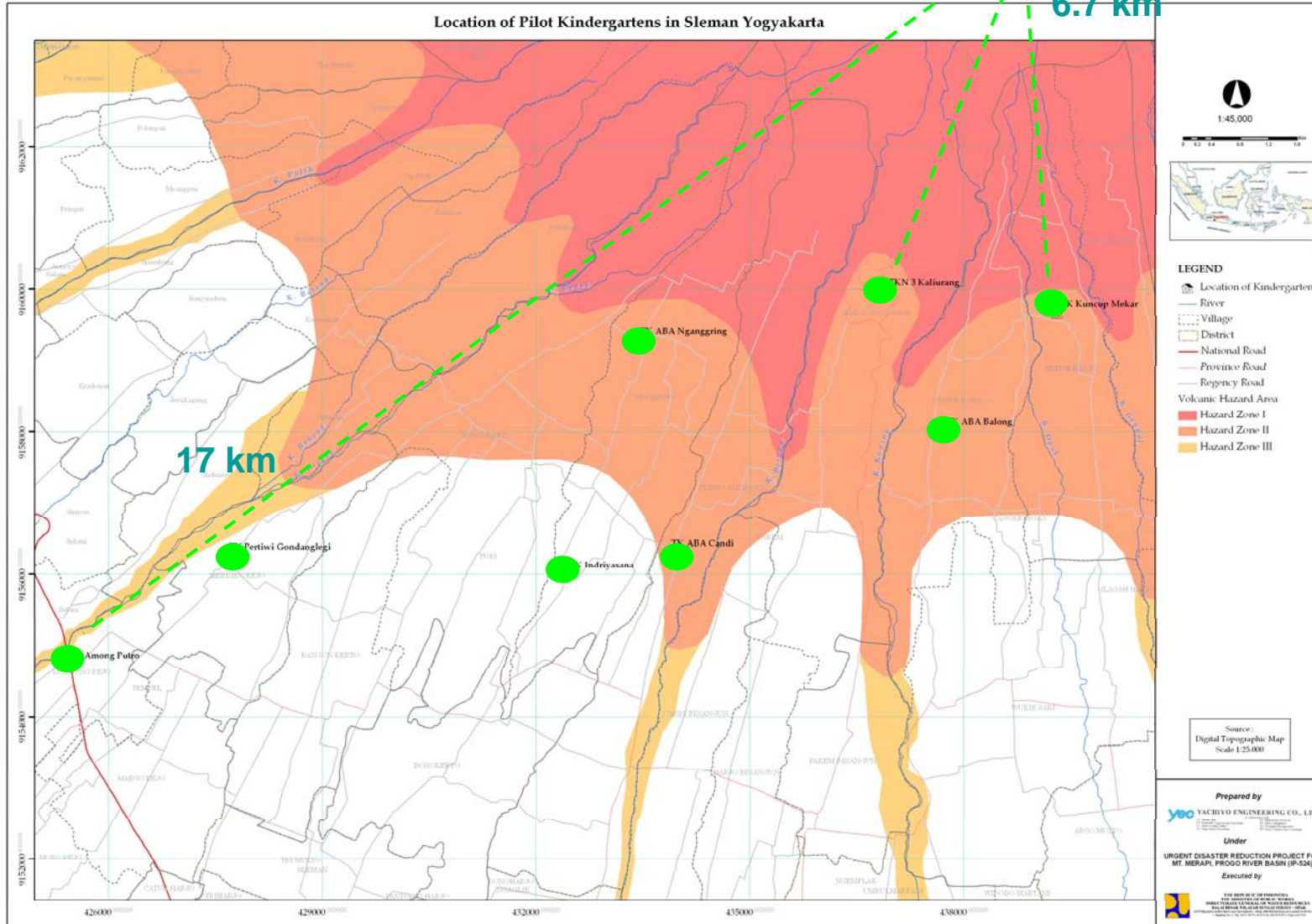


# The Location of Kindergartens Involved in the Project

**Mt. Merapi**



6.7 km



# **Necessity of Adapting the contents of Original Bo-sai Duck into Local Context**

- Type of hazard/ concerns
  - Hazards/ concerns in the vicinity of volcano
- Cultural aspect
  - The drawing
  - The “first action” cards
- Type of animal
  - Should be at least those which teachers are familiar with
- Languages
  - Expressed in Indonesian language

# Actions Taken to Develop the New Version

- Demonstrate to teachers
- Discussion with teachers and parents
- Teachers demonstrate to kids and parents (only one school)
- Feedback from parents

To be taken:

- Feedback from experts



Parents

# Process of Bo-sai Duck Introduction

**Bo-sai Duck  
Original Version**

First introduction and demonstration to representative of teachers from 8 pilot kindergartens and to local university who's involved in the project

Check the adaptation

- Direct feedback
- Demonstration of original version to children and parents & feedback
- Feedback based on teacher's discussion
- Feedback from the local university
- Feedback from experts

Discuss and create based on feedback

**Bo-sai Duck  
Merapi Version**

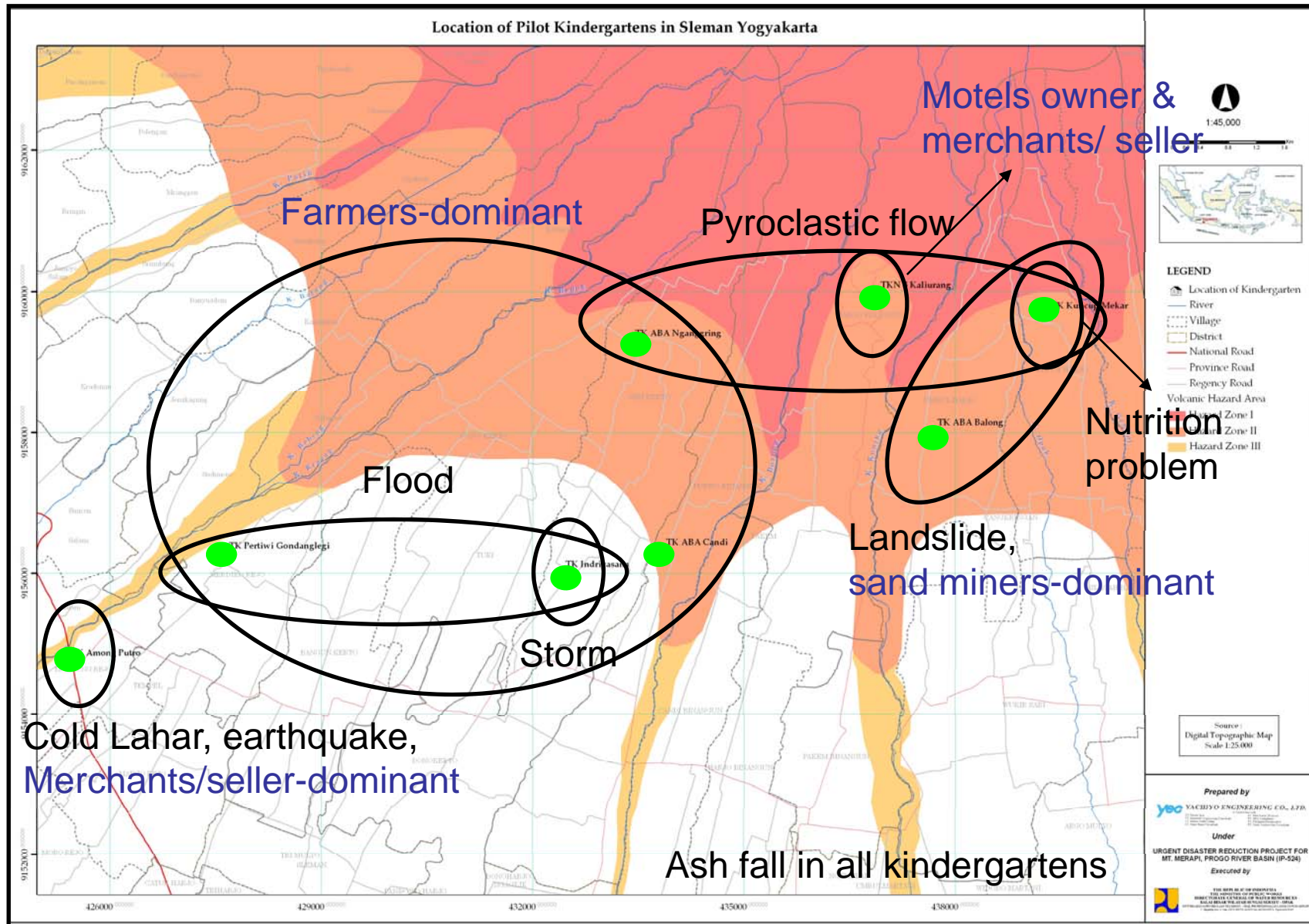
# Lessons Learned through Adaptation Process

- Most of kindergartens highly appreciated interactive game and stated the need of Bo-sai Duck-kind of game for disaster education in their area, although they have some constraints:
  - Knowledge about disaster response
  - Time
  - Budget
- Although the 8 kindergartens are located in the volcanic-risked area, the major concerns are different from each other, based on their:
  - Location
  - Surrounding environment
  - Dominant occupation of parents
  - Experiences

# Lessons Learned through Adaptation Process

- Some teachers concerned on **how to educate the parents through children** (e.g. sand miners) and education for **children's future**
- The differences might also affects how they (teachers, parents) **participate actively** in the development of Merapi version Bo-sai Duck
- Children's understanding depends also on the **instructor's understanding** and **how instructors convey the message**/ communicate during the game

# Some Major Concerns



## Developing Bo-sai Duck Merapi Version based on the Feedbacks

- Small number of cards for the start (to be tested)
- Consider the term 'Bo-sai Duck' to be easily accepted by local community
- Consider the animals and response, consult with experts
- Alternative hazards/ concerns:

*Earthquake*

*Rain fall*

*Pyroclastic flow*

*Ash fall*

*Landslide (sandminer)*

*Environmental issue, reclamation in ex-sand mining site*

*Cold lahar*

*Fog/ Dew*

*Flood*

*Storm*

*Social problem (related to parents who have motels)*

*Nutrition problem, the importance of breakfast (related to sandminers)*

# Chosen Hazards/ Concerns for Merapi Version Bo-sai Duck (trial)

No	Hazards/ Concerns	Reasoning
1	<b>Ash or ash fall</b>	<ul style="list-style-type: none"> <li>a. The ashes have reached even until the farthest kindergarten</li> <li>b. Dangerous for respiratory system especially children's</li> </ul>
2	<b>Pyroclastic flow</b>	<ul style="list-style-type: none"> <li>a. One of the main and the most destructive hazard of Merapi volcano</li> <li>b. Should be known widely by public, since Merapi volcano is sometimes visited by outsiders (e.g. tourists)</li> </ul>
3	<b>Cold lahar</b>	<ul style="list-style-type: none"> <li>a. One of the main and the most destructive hazard of Merapi volcano</li> <li>b. Should be recognized especially by those who live nearby the river or who spend time in the river bed (e.g. sand miners)</li> </ul>
4	<b>Earthquake</b>	<ul style="list-style-type: none"> <li>a. Existence of potential volcanic earthquake prior to an eruption</li> <li>b. Can be applied even in the area with potential tectonic earthquake</li> </ul>
5	<b>Bee</b>	<ul style="list-style-type: none"> <li>a. One of common threats around Merapi, and children around Merapi live closely with nature</li> <li>b. Can be applied elsewhere</li> </ul>
6	<b>Car traffic</b>	<ul style="list-style-type: none"> <li>a. Basic things children have to be aware of when they are walking on the street</li> <li>b. There are many trucks (e.g. sand mining trucks) in Merapi area</li> <li>c. Can be applied elsewhere</li> </ul>

# Tentative Cards for Merapi Version Bo-sai Duck

No	Hazard	First Action	Representative animal	Message
1	Ashes/ ashfall	cover the nose and mouth	orangutan/ monkey (covering with cloth and two hands)	use a mask or hold a damp cloth over your face to help with breathing
2	Heavy rain*	listen	rabbit (big ears listening)	listen to the signs and instruction to evacuate, avoid river valleys (possibility of cold lahar and landslide)
3	Cold lahar*	run	cheetah (run fastly)	run to avoid river valleys and stay away from low lying areas
4	Pyroclastic flow	find shelter	(animal with shell as protection)	stay away from the volcano and stay indoor/ find shelter
5	Earthquake	duck (drop, cover and hold)	duck (duck covering its head)	first important thing is to protect your head
6	Bee	freeze/ move slowly	elephant (moving slowly)	it's dangerous to move suddenly when there is a bee
7	Crossing a street	watch on the right, left, and right again	dog/ chicken (checking its right and left side)	confirm your safety by watching on your right, left, and then right again

# Future Plan

- Discuss with experts about the current idea
- Discuss with teachers about the current idea