



PAPERS

**PROMOTING INNOVATIVE LITERACY EDUCATION  
IN COPING WITH NATURAL DISASTERS**

**(Strategy for The Development of Natural Disaster Literacy Program)**



by

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CENTRE FOR THE DEVELOPMENT OF EARLY CHILDHOOD, NON FORMAL AND  
INFORMAL EDUCATION REGION II  
CENTRAL JAVA-INDONESIA**

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**I. BACKGROUND**

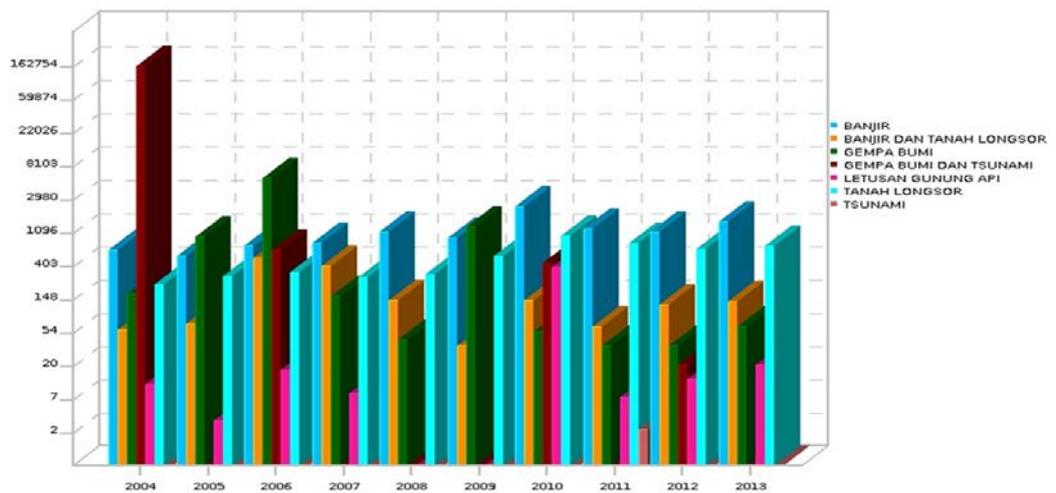
Indonesia is a country in the ring of fire area. The ring area where the minerals and natural gas lay in the deep of Indonesia oceans and earth. It makes Indonesia rich in minerals and natural gas, and also makes Indonesia have fertile soil. Geographically Indonesia is an archipelago country. In the southern and eastern parts of Indonesia, there is a volcano-belt (volcanic arc) that extends from the islands of Sumatera, Java, Nusa Tenggara and Sulawesi.

The geographical condition of Indonesia makes the country prone to natural disasters. The natural disasters that could potentially happen in Indonesia are volcano eruptions, earthquake, tsunamis, floods and landslides. Central Java and Jogjakarta are two provinces with high risk of volcano eruptions. In addition, Lampung is a province highly prone to tsunami because of its geographical position. Not to mention, Krakatau, the volcano situated between Java Island and Sumatra Island, is remains active and tend to erupt someday and evokes the tsunami in Lampung Province.

The data of the natural disaster in Indonesia from 2004-2013 shows that tsunami and volcano eruption were the most destroyed natural disasters in Indonesia. Thus, the victims were. Tsunami, mostly happened in Sumatera

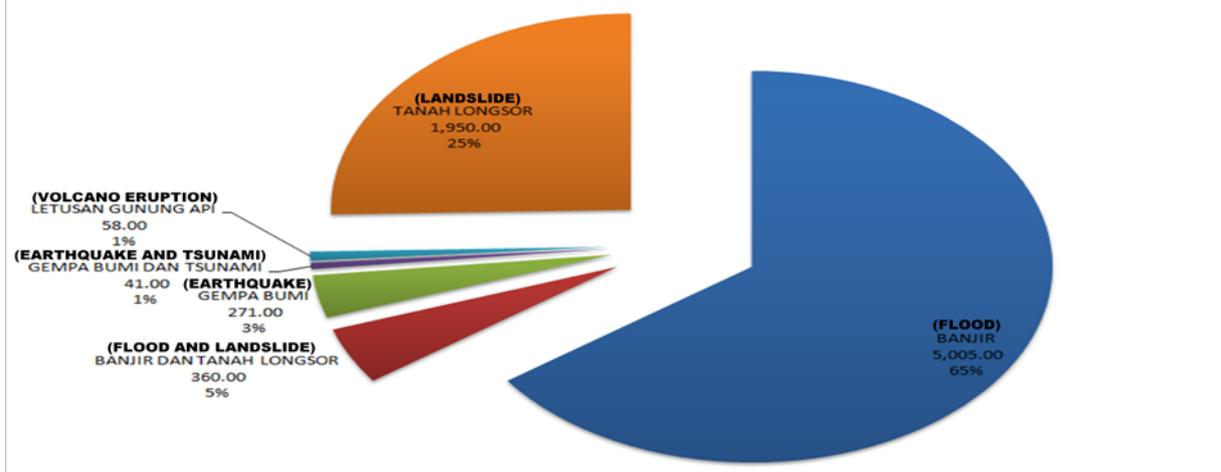
Island. Meanwhile, the volcano eruption mostly happend in Java. The disasters brought so many victims. Dead and alive. The data below shows the victims of natural disasters from 2004 – 2013.

Graphics of Natural Disasters and The Victims In Indonesia 2004 - 2013



The data of the natural disaster in Indonesia from 2004-2013 according to the happening show that flood and landslide most happened, like you see comparison graph bellow:

Comparison Graph Disaster Year 2004 - 2013



On the basis of this geographical condition and Indonesian population's activities, Directorate of Community Education Development developed the policy of multiple literacy programs. As the implementation unit and as a follow up of the policy, Centre for the Development of Early Childhood, Non Formal and Informal Education created a model of community education based on the natural disasters.

There were so many victims of natural disasters in Central Java and Jogjakarta Provinces. The eruption of Mount Merapi, the most active volcano in the world, has damaged so many areas near the mountain. Mount Merapi's eruption, as predicted by Board of Meteorology, Climate and Geophysics (BMCG), could happen every four years. In 2010, the eruption of Mount Merapicaused over 350,000 people to be evacuated from the affected area. About 10-15% of the victims were people living in poverty and illiteracy.

Natural Disaster Literacy Program is important for community empowerment, especially for illiterate adults. We barely have nocontrol over when and where natural disasters will happen. What we can manage is how people and communities confront and deal with the dangers caused by natural disasters.

The effects of natural disasters will get worse because of lack of knowledge and skills on how to be aware of and mitigate the natural disasters. People need to be aware and ready to face the risks of natural disasters in their area, while those affected by disasters need social rehabilitation to help them return to normal life. Therefore Natural Disaster Literacy Program is developed by including:

1. Promotion of disaster risk reduction knowledge in community learning centers (CLCs);
2. Integration of disaster risk reduction in literacy learning materials;
3. Implementation of disaster mitigation in CLCs;

4. Development of training and learning programs in disaster risk reduction targeted at specific areas, and community-based;
5. Improvement the role of volunteers, as appropriate to enhance local capacities to mitigate and cope with disasters; and provision of equal access to appropriate training and educational opportunities, especially for women and youth.

## **II. OBJECTIVES**

The Natural Disaster Literacy Program is mainly conducted to guide the victims in handling and coping with the disasters. In addition, it stimulates knowledge to the illiterate people on how to be aware about the disasters and how to keep the environment wisely. In line with it, the specific objectives of the program are as follows:

1. Developing curriculum of literacy competence based on the Standard Competence of Basic Literacy and Standard Competence of Entrepreneurship Literacy. The curriculum contents appropriate with the natural disaster.

2. Implementing literacy acceleration

The program is implemented to support the national program on multiple literacy programs, including Literacy Education for Climate Change for 21<sup>st</sup> Century as one of the elements integrated with AkrAB! (Literacy Initiative for Empowerment in Indonesia) developed by Directorate of Community Education Development. The national multiple literacy programs are:

- a. Basic Literacy;
- b. Entrepreneurship Literacy
- c. Family Literacy
- d. Folklore-based Literacy
- e. Literacy Based on Mother Tongue

f. Writing Culture Improvement through Mothers and Children Newspaper

3. Expanding access of literacy education through the establishment of Community Learning Centre (CLC) and Community Reading Centre (CRC).
4. Providing training of Quick Disaster Response for the committee of CLC and other non-formal education units.
5. Establishing Community Learning Hub for the natural disaster mitigation.
6. Producing learning materials in relation to natural disaster mitigation.
7. Providing literacy service for disaster refugees.
8. Establishing the First Provider of Emergency Response Service. The CLC, Community Learning Hub, and CRC are the organizations which have responsibility to provide any information about the natural disasters. The followings are the lists of the duties of the provider of emergency response:
  - a. Offering (transferring) the community (read: the refugees) to understand and have knowledge about natural disasters; how the disasters might happen, what are the characteristics of the disasters and how to cope with the disasters for the first time safely.
  - b. Guiding the community in healing their traumatic condition after the disasters.
  - c. Giving some literacy lessons for illiterate people so that they can read the signs of the disasters in written texts.
  - d. Helping the community (the refugees) in order to organize their life after the disasters.
  - e. Elaborating methods and strategies on how to handle the disasters.



### III. OUTREACH

#### 1. Main Target Group

The program mainly focused on the group of illiterate people, lower and middle class society, school dropout and woman or girls who don't have chance to get the higher school.

#### 2. The Location of the Project

The pilot project is located in the area of MERAPI mountain in Central Java and Jogjakarta. Then, the project expanded to other area and provinces.

#### 3. Number of Participant Reached Annually

The number of participant can be seen on the table below:

No	Year	Natural Disaster Literacy (people)	Budget (USD)	Basic Literacy (people)	Budget (USD)	Entrepreneurship Literacy (people)	Budget (USD)
1.	2008	15,720	565,920	8,000	288,000		
2.	2009	3,598	129,528	33,760	1,215,360		
3.	2010	14,016	504,576	19,750	711,000	1,000	450,00
4.	2011	8,817	317,412	15,000	540,000	6,500	299,000
5.	2012	916	32,976	8,000	288,000	9,500	437,000
6.	2013	382	13,752	12,000	432,000	16,400	755,400
	TOTAL	43,449	1,564,164	371,150	2,215,800	102,220	5,418,300

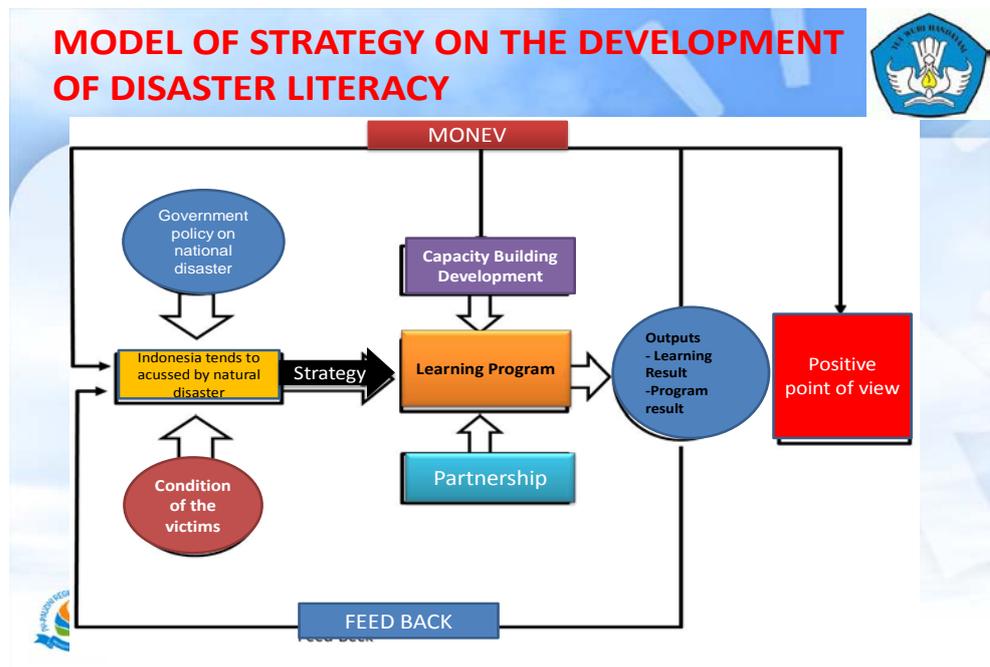
### IV. PROGRAM DELIVERY

#### A. Structure and Mechanism

The teaching and learning activities are developed based on the situation after the natural disasters. Therefore, the syllabus, materials and media for the teaching learning process are suited with the situation. Directorate of Community Education Development has developed national Standard of Basic Literacy and Entrepreneurship Literacy, and hence, the curriculum for Natural Disaster Literacy Program is developed based the Standards. In order to make it familiar, we employed the local genius/wisdom as the facilitators or tutors. The materials for the learning process are not only books or other reading materials commonly available in the bookstore, but we used, mixed and developed materials from the surroundings.

Natural phenomenon is one of the best learning materials for the service. Similar to other process of teaching and learning, we also use books, blackboard and chalk to deliver the lessons. The lessons are held three times a week, taking place in the CLC or Community Learning Hub. After the service is delivered and the time for victims recovery is over, the program is moved to the learners' (read: victims') villages. Some villagers lend their home as the place for the process of teaching and learning. The tutors come from the local genius, so they have strong relationship to the refugees.

The flowchart of the strategy can be written as follows:



## B. Teaching-Learning Methodology

The learners' needs are determined by their needs of knowledge and understanding on how to handle the natural disasters wisely. The victims of the disasters also need help to heal their traumatic period. Therefore, the traumatic healing is another basic need of the natural disaster victims.

The approach used for teaching and learning process is education for adults. The experience based learning is the most suited for the learners. Thus, the method of teaching is based on the learner's experience in facing the natural disasters. The methods implemented are namely:

- a. Participatory approach by integrating life skills into literacy program
- b. Mother tongue based approach.
- c. Joyful learning approach.
- d. Empowerment approach

## C. Teaching-Learning Materials

As explained earlier, the curriculum is developed based on the national Standard of Basic Literacy Competence and Standard of Entrepreneurship Literacy Competence developed Directorate of Community Education Development. However, the contents of the learning are adaptable to the situation of the learners (victims) and the location of the natural disasters. Therefore, although the framework of the curriculum is following the national Standard of Basic Literacy and Entrepreneurship Literacy, the specific contents do not have specific standard or could adapt based on the surroundings.

Curriculum for Basic Literacy:

STAGE 1	<ul style="list-style-type: none"> <li>a. Understanding short text with simple repetitive language pattern on natural disaster , climate change and promoting ESD topic.</li> <li>b. Able to gain information from general signs and symbols of natural disaster and climate change topic.</li> </ul>
STAGE 2	<ul style="list-style-type: none"> <li>a. Understanding simple and correct independent sentences on natural disaster ,climate change and promoting ESD topic.</li> <li>b. Able to gain information from known or previously recognized short documents, sources, signs, and symbols.</li> <li>c. Able to gain information from various everyday sources.</li> </ul>
STAGE 3	<ul style="list-style-type: none"> <li>a. Understanding simple short and long text correctly and independently on a natural disaster , climate change and promoting ESD topics.</li> <li>b. Able to gain information from various sources.</li> </ul>
STAGE 4	<ul style="list-style-type: none"> <li>a. Understanding more complicated text correctly and independently on natural disaster ,climate change and promoting ESDtopic.</li> <li>b. Able to gain information on various depth and details from assorted sources.</li> </ul>

Curriculum for Entrepreneurship Literacy:

STAGE 1	<ul style="list-style-type: none"> <li>a. Identifying the types of enterprise with potential to be developed appropriate in the condition of natural disaster , climate change and promoting ESD</li> <li>b. Writing and communicating of self-enterprise to be developed.</li> </ul>
STAGE 2	<ul style="list-style-type: none"> <li>a. Mastering a particular skill to be developed as self-enterprise.</li> <li>b. Marketing the product.</li> </ul>
STAGE 3	<ul style="list-style-type: none"> <li>a. Conducting analysis for enterprise profit.</li> <li>b. Establishing partnership for the development and</li> </ul>

	sustainability.
STAGE 4	Maintaining the basic literacy competency while running the enterprise.

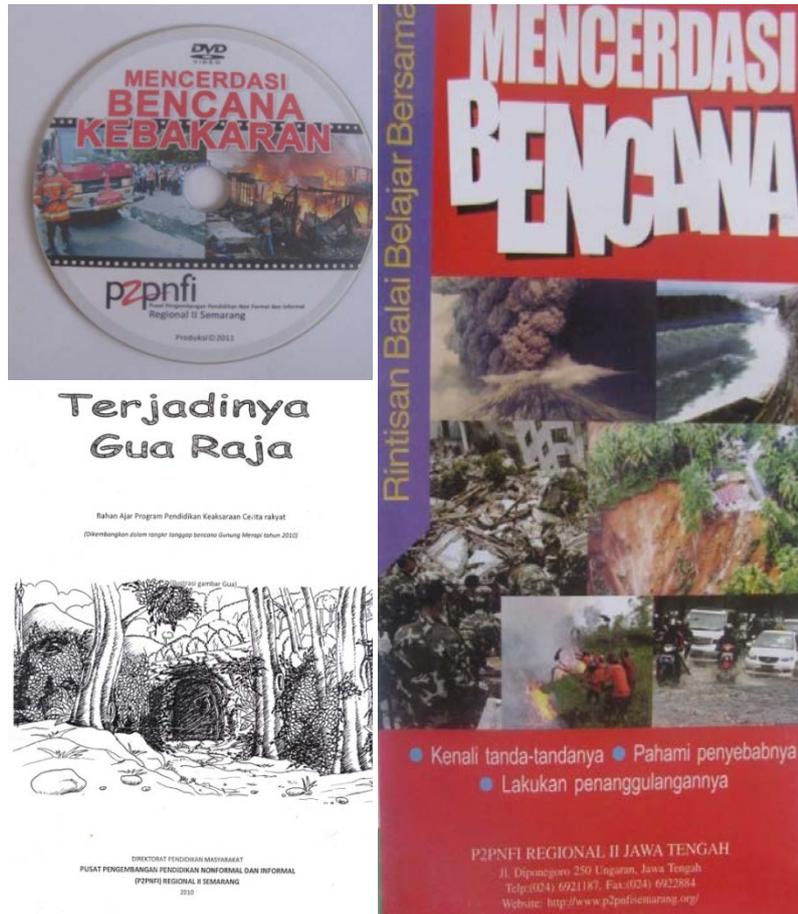
The material used in teaching process are Books, posters, modules, leaflets, DVDs, CDs, laboratories special for Natural Disaster Literacy Program, computer, natural materials. The materials are developed by the team include teachers, facilitators the team from the Centre for the Development of ECNFIE, academicians, and local genius/wisdom.

**D. Training for the Teachers (tutors)**

The Centre for ECENFIE provides the Training of Trainer (ToT) for Literacy Education and life skills tutors. The Centre invites the facilitators with high competence and capability as the trainers to deliver some training.

**E. Use of the ICT**

The programs use Information and Communication Technologies (ICTs) media such communication radio, computer utility, and TV as the learning media. Some materials are also created in digital versions. In order to have adequate electricity in the location of the disasters, we also provide Electric Generator.



## V. PROGRAM RESULT

The results of the program are as follows:

1. There are three provinces as the location of the program, in which the villages of are hit by natural disasters.
2. The Natural Disaster Literacy program has served 43,449 people, Basic Literacy 371,150 people and Entrepreneurship Literacy 102,220 people.
3. Learning Process Result: The learners have the competence of literacy based on The Standard of Literacy Competence.
4. Program result: minimize the effect or trauma caused by the disasters.

5. The community and the learners (victims) are able to view natural disasters from positive point of view.
6. There are some positive activities to spend their time, and at the same time increase their life skills to improve their income.
7. Community Learning Hub takes part in piloting the project. It implements the natural disaster literacy program at practical level.

## **VI. MONITORING AND EVALUATION**

The assessment of learners' learning outcomes (knowledge, understanding, skills, competencies) constitutes integral component of the teaching and learning process and serves a number of purposes, including;

1. providing facilitators with information about learners' knowledge, understanding and skills;
2. participation of educational authorities to monitor the performance of Natural Disaster Literacy.

In brief, the monitoring and evaluation is carried out at two important aspects: academic: how learners (disasters victims) able to gain or improve their literacy skills teaching and learning process: how the teaching and learning process could be effectively implemented in difficult situation such as the location of natural disaster.

The evaluation on natural disaster literacy program aims to examine the impact of the implemented program on learners' performance and to revise / readjust the intended curriculum accordingly.

It is important to note that the evaluation provides no specific test/exam, unlike other literacy programs. The common evaluation used for natural literacy program equips journals, special notes and anecdotes.

## **VII. SUSTAINABILITY**

1. Sustainability of the institution is developed by providing entrepreneurship program for Community Learning Centres to equip them with financial independency. There are two CLC of natural disaster project in two districts.
2. Sustainability of the literacy achievements are designed by expanding access for reading materials through the provision Community Reading Centres (CRC)in public areas. In the project area the number of community reading centres are about 11 reading centres spread in 11 villages.
3. Sustainability of partnership and facilitator competencies is implemented by providing capacity building for CLCs' and CRCs' facilitators.
4. Sustainability of laboratory specifically designed for natural disaster literacy program by expanding and providing electronic devices in the laboratory, located in the Centre.

## **VIII. INNOVATIVE FEATURES**

Development of natural disaster literacy program has some innovative features as follows:

### **1. Idea**

This model is specially designed to provide adult education (non formal), the refugees of natural disasters (Merapi Volcanoe)had hard trauma because of their lost of family and things.

### **2. Teaching learning content**

The content focuses on two aspects:

- a) Traumatic healing services,
- b) Life skills to improve the victims' entrepreneurship skills for their life after coming back to their villages.

### **3. Learning materials**

The learning materials are developed from the victims' environment, location of the disaster and local wisdom (for example legend of the village, success story of some neighbour people, and local potentials that could be developed in the victims' place)

### **4. Learning process**

The learning process focuses on 3 main terms:

- a) Integrated process,
- b) Resource sharing,
- c) Utilizing of ICTs

### **5. Evaluation**

- a. Basically, the literacy competency refers to the national standard, but the evaluation is done by considering the situation and condition of the place of teaching and learning.
- b. Reading, writing, and counting competencies are evaluated by considering the learners' skills, stressing more on their self-evaluation.

### **6. Some superior achievements of this model are**

- a) Very specific, focused on natural disaster literacy (Merapi volcano eruption),
- b) generic model, can be adapted on other natural disasters such as flood, slide of hills, storm, in the long time life at the refugee camp.

## **IX. CHALLENGES AND CONSTRAINTS**

Some challenges and constraints in running the program are as follow:

1. There is great variety of capacity and competency of facilitator and tutor of natural disaster literacy program.

2. Facilities and infrastructure supporting literacy program are still limited. As a logical consequence, the implementation is based on volunteer community participation.
3. Budget for literacy program in general and natural literacy program in particular is relatively limited.
4. Coordination of the planning, implementation, and evaluation of literacy programs in the era of local autonomy tends to be less effective so that the implementation of literacy programs, (natural literacy program at the worst) is often less paid attention.
5. It was hard to find some villagers to be the volunteer or tutors.
6. The disaster's victims prefer to go back to their home than to stay in the camp
7. The use of ICTs is not well supported, by situation and by budget.
8. The victims have lack comprehension on the modern equipment for minimizing the disaster impact.
9. The victims, especially villagers, commonly have traditional belief in myth and tradition.