

# Does Social Protection on Education increase the Capacity of community in facing Disaster?

Djoko A. Suroso<sup>1</sup>, Saut A. Sagala<sup>1</sup>, Husnul A Alberdi<sup>1</sup>, Yasmina Wulandari<sup>1</sup>

<sup>1</sup>Institut Teknologi Bandung, Jalan Ganesha No. 10 Bandung

**Abstract.** Based on crunch model, the root causes of vulnerability for disaster are on political, natural, economic, and social aspect. To target these root causes, there is a need to have a focus on development of education. Education has an important role in increasing capacity of an individual and a community. Government of Indonesia (GoI) has prioritized the development of education of society even allocated about 20% of their spending. In addition, GoI has social protection program that also affected the education, particularly on children namely Indonesia smart program (Program Indonesia Pintar). For this paper, Cianjur District was chosen as case study due to several reasons. First, Cianjur is the most vulnerable district to disaster in West Java Province particularly for floods and landslides. Second, Cianjur is one of districts in West Java that have many social problems. The objective of this paper is to analyse the role of Indonesia Smart Program in increasing the capacity of children to strengthen disaster resilience in Cianjur District. The paper will present how Indonesia smart program implemented in Cianjur and what are the challenges in the process from beneficiary and government perspective.

## 1. Introduction

Socioeconomic and demographic factor is one of the most important causes of vulnerability of exposed communities to disaster(1). Various approaches have been carried out to increase the capacity of community and to reduce the vulnerability, particularly the root causes on social factor. Based on crunch model(2), the root causes of vulnerability are on political, natural, economic, and social aspect. To target these root causes, there is a need to have a focus on development of education. In fact, there are various study show the important of education in disaster risk reduction and resilience(3).

In recent years, social protection in developing countries tend to using cash transfer as their strategy(4,5). Most of them using conditional cash transfer scheme into their social protection program such as Bolsa Familia in brazil and Familias en Accion in Columbia(6,7). Majority of these social protection have objective to reduce the inter-generational poverty. Other than health, education played important role to achieve the objective. The enrollment of children in household to go to school become one of their focus as requirement to get the financial aid.

Education has an important role in increasing capacity of an individual and a community. In general, the better educated people tend to earn more, have greater wealth, and live longer and healthier life(8). Government of Indonesia (GoI) has prioritized the development of education of society even allocated about 20% of their spending. In addition, GoI has social protection program that also affected the education, particularly on children namely Indonesia smart program (Program Indonesia Pintar).

Indonesia Smart Program is a national social protection scheme for children (6 to 18 years old) in increasing their opportunities to receive formal and informal education(9). Indonesia Smart Program is a conditional cash transfer program to children. Conditional cash transfer program to children is suitable for child protection outcome with regular monitoring and complement with other needs of children (10). This program complements other social protections from GoI for education such as School Operational Aid (Bantuan Operasional Sekolah) and Family Hope Program (Program Keluarga Harapan).

For this paper, Cianjur District was chosen as case study due to several reasons. First, Cianjur is the most vulnerable district to disaster in West Java Province particularly for floods and landslides(11). Second, Cianjur is one of districts in West Java that have many social problems. For instance, the child abuse in Cianjur is relatively high compared to other districts in West Java. From 2009-2015 there are 464 cases for child and women abuse, and just in 2015 there are 74 cases. These social problems could be caused by limited of knowledge about their right and how to deal with such social problems. Therefore, education could address this issue by increasing their knowledge on their right, their value, and norm.

The objective of this paper is to analyze the role of Indonesia Smart Program in increasing the capacity of children to strengthen disaster resilience in Cianjur District. The paper will present how Indonesia smart program implemented in Cianjur and what are the challenges in the process from beneficiary and government perspective. After that, the paper will explain how the Indonesia smart program influence the capacity of children in facing disaster.

In this study, the qualitative approach was the main method for analysis and data collection, although a small part of the analysis will be supported with simple quantitative analysis. Secondary data are reports, statistics, and previous studies, while primary data are collected through interview and focus group discussion with stakeholders, such as beneficiaries (students), schools, and government agencies in Cianjur District.

Result of this paper are the Indonesia smart program face many challenges particularly in Cianjur District such as the accessibility of the beneficiary to get the financial aid and the monitoring aspect of utilization of the money. Indonesia Smart program actually has an indirect effect in increasing the capacity of children in general. However, in increasing the capacity of children in disaster risk reduction aspect is relatively limited and indirect. Nonetheless, it is still possible to strengthen disaster preparedness through curriculum in schools.

## **2. Methodology**

Education have role as basis for increasing capacity and reduce the vulnerability (Figure 1). This study will focus on how social protection could affected the community on resilience. How education related to disaster and resilience could be seen from the Figure 1 which adapted from crunch model.

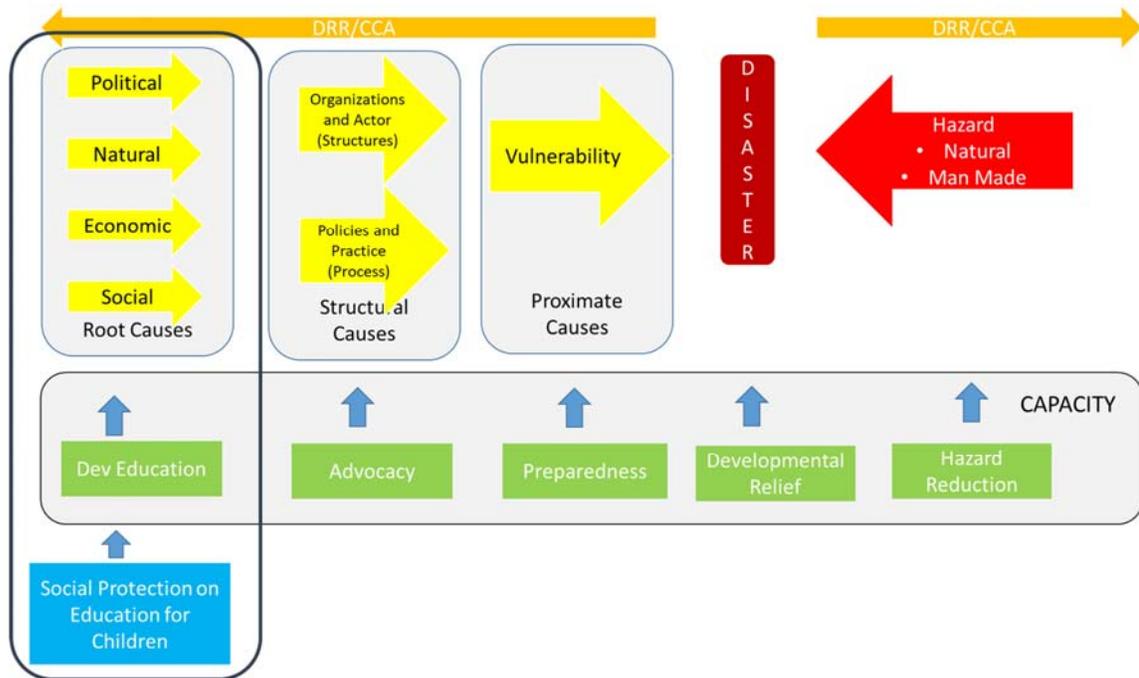


Figure 1 The approach of the study

This study mainly uses qualitative approach to understand how social protection on education, smart Indonesia program could affect the community resilience. The data collected through deep interview and focus group discussion (FGD) with several stakeholders. The respondent for FGD is children who receive the benefit from PIP and parents of the children. For deep interview, several stakeholders who involved with this project such as teacher, headmaster, manager of informal education school, education agency, social agency, and development and planning agency. In addition, to enrich our study we also review documents and studies about this social protection program and resilience in general.

### 3. Literature Review

#### 3.1. Social protection program on Disaster Risk Reduction

Social protection was the concept that evolved in the recent years that focus on short-term intervention to reduce the impact of shocks but also consider the longer-term design to combat poverty(12). In 1990s, social protection was safety nets for poverty, livelihoods, risk, and vulnerability. With this potency, currently social protection is considered as important development strategy to reduce poverty and vulnerabilities of marginalized population. In addition, social protection also could design in increasing the coping capabilities and decreasing social exclusion in poor countries.

There are different strategies in social protection. One of emerged strategies in recent years particularly in low many income countries is cash transfer programs. In general, cash transfer program could be categorized into two types: conditional and unconditional cash transfer. Unconditional cash transfer program has been implemented in several developing countries. For instance, Kenyan government has design unconditional cash transfer program for orphan and vulnerable children that face poverty.

Conditional cash transfer programs usually provide cash to households with condition to fulfil requirements such as the enrolment of children in school, clinic attendance to monitor young children, and for pregnant mother and lactating mother(7). This scheme arises in Latin America with several

countries implement conditional cash transfer program for their communities such as Brazil with Bolsa Familia, Chile with Chile Solidario, or El Salvador with Red Solidaria. Most of social protection program invest in education as their requirement. Conditional Cash transfer program have evidence to relatively efficient and effective in improving educational outcomes(13).

Social protection has positive impact on people's lives. Countries with social protection systems in place are better able to protect its people from the impacts of disasters. Social protection is aimed at assisting individuals and groups with overcoming any challenges they may face by reducing vulnerability whilst also building resilience. In recent years, the national and international government policy started to recognize that social protection is a means by which the impact of natural disasters can be mitigated.

### *3.1.1. Social protection in education program in Ghana*

Ghana as developing country in Africa use social protection as their strategies in increasing the quality of their life. Since 1957, after the independence from colonial rule, Ghana has implemented several social protection schemes. The social protection program gives different aid for communities depend on their scheme such as The National Pension Scheme in 1946 which provide pension to civil servant and army, interstate succession Law 1984 which protect the inheritance rights of widow and children, and Education Act of 1961 that guaranteed free primary education for all Ghanaians up to six years. The social protection on education schemes, a new policy known as Free Compulsary Universal Basic Education (FCUBE) was introduced. Education for children for pre university was free but they still need to pay for uniforms text, book, and PTA dues that will be a burden for poor children (14). Thus they develop new schemes under the poverty reduction strategies which gives each primary school about US\$3.00 per pupil per year for their uniforms, text book, and etc(15).

Other programs in Ghana is school feeding program that began in 2005 with objective to increase the school enrolment and retention by providing at least one daily meal to children in deprived districts (16). This scheme similar with other countries program in feeding children. Del Rosso (17) find that the countries which started this feeding program had improvement in attendance, increased the enrolment, and improvement on learning. This schemes also have potency in reducing hunger and malnutrition in rural communities and break inter-generational cycle of poverty.

In general, these social protection schemes provided benefit to education outcome but it faces several challenges. The poor record keeping, inconsistency transference money, and some school still charge fees for some item was one the challenges of this social protection schemes(14). The increased of enrolment is one of positive impact of this program. However, it also decreases the number pupil/teacher ratio and demand for more space, teaching material, and teacher.

### *3.2. Indonesia Smart Program (Program Indonesia Pintar)*

School is one of the places where children could find stability, and therefore a source of normalcy, second to home. Thus, school can be a strategic place for a program to be installed which related to children resilience. From other perspective, there is an importance and urgency to support the school institutions in order to develop the children resilience.

Indonesia Smart Program (*Program Indonesia Pintar*-PIP) Is one of the national social protection program that aims to improve the enrolment in schools; increase the number of students continuing their education; and to reduce discrepancies in the educational system. PIP will give educational grants to children of school-going age (6-21 years old) which come from families that hold a Family Welfare card or fulfill the criteria. It is the improvement of the previous program name Cash Transfer for Poor Student (BSM) program.

The target beneficiary of this program is students (6-21 years old) who have Indonesia Smart Card (*Kartu Indonesia Pintar – KIP*) or students from vulnerable family such as(9):

1. Student from families who are participant of Family Hope Program (*Program Keluarga Harapan-PKH*)
2. Student from families who have family welfare card (*Kartu Keluarga Sejahtera – KKS*)
3. Students who are orphan or living in orphanages or under social care
4. Students who affected by disaster
5. Students in informal education or vocational/courses institution.
6. Students from vocational school who focus on priority area such as agriculture, forestry, and maritime.

*Table 1 PIP Financial Aid for Children*

Level of Education	The Aid for 6 months
Elementary School (SD, MI, Paket A)	225.000 IDR
Junior High School (SMP, MTs, Paket B)	375.000 IDR
Senior High School (SMA, SMK, MAN, Paket C)	500.000 IDR

*Source: tnp2k.co.id*

Most the financial aid will be given every 6 months for student in carious amount (Table. 1). The beneficiaries are expected to use this aid to complement the needs as a student such as for books, uniform, and transportation cost.

#### **4. Location Study**

Located in West Java, Indonesia, Cianjur is a home for 2.5 million people. The district mainly produces agricultural product, especially rice and has become the second largest source of rice production in Java Island. Cianjur has 32 sub-districts with 11 villages in the city. This area is prone to disaster such as floods, landslides and earthquakes. Cianjur was categorized as high-risk class of disaster with a score of 250 that surpasses 496 cities/districts throughout Indonesia(1).

As one of high-risk class of disaster district Indonesia, the exposure of communities to disaster is high, particularly for the most vulnerable people such as older people, children, people with disabilities and women, suffer the most from climate change and disasters. Children are one of the most vulnerable groups in society due to their dependence on adults. However, in Cianjur district, children will find that the face many problems that increase their vulnerability such as child neglect, street children, vagrants and beggars, human trafficking, physical and sexual violence towards children and women, poverty, malnourishment, maternal and child mortality, child marriage, and high divorce rate (Figure. 2).

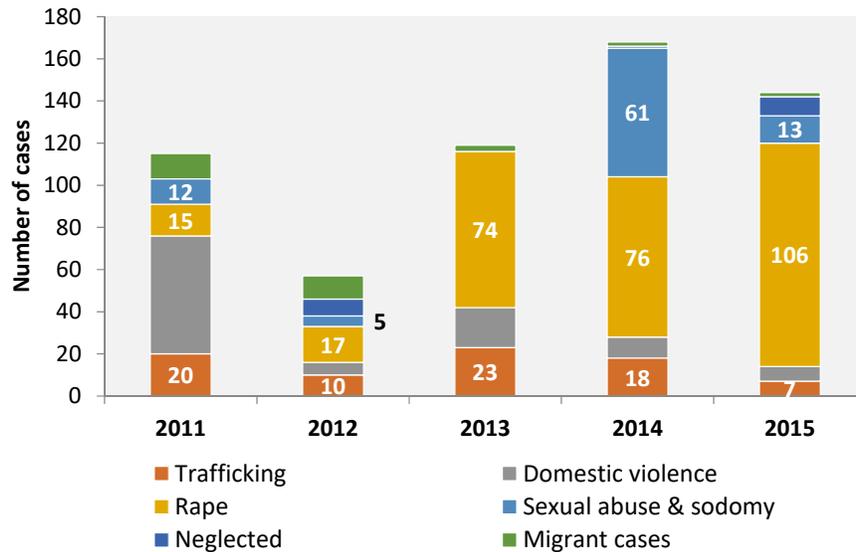


Figure 2. Social problem in Cianjur (BKKBP Cianjur District, 2016)

One of way that children could face this problem and increase their capacity as well as the vulnerability is through education. PIP as one of social protection which targeted children as their beneficiary to increase their participation in school could be a part of solution in facing these challenges. However, schools as education facilities in Cianjur also have many problems such as the number of school that not enough for some areas, the number of teacher, and their education facilities, particularly for southern part of Cianjur which have difficult accessibility compare to northern part.

## 5. Indonesia Smart Program Implementation and Challenge in Cianjur District

PIP in Cianjur districts has been implemented in the end of 2014 similar with national. Almost of every sub-district in cianjur had receiver of PIP. Majority of beneficiary have education on high school level. Based on Figure 3., there are some sub-district that have smaller number than other sub-district such as Campaka Mulya, Naringgul, Sukaresmi, and kadupandak. Most of beneficiary located in north of Cianjur District. The northern part of Cianjur had more students in compare to the southern part.

The distribution of financial aid is done by national bank. As the beneficiaries (students) get information from schools that they get the aid, they will need to fulfill certain requirements for them to get the money. The financial aid must be given directly to the student. Usually, students will go to the bank accompanied by teacher or school administrative, particularly for school that located quite far or have difficult access to the bank.

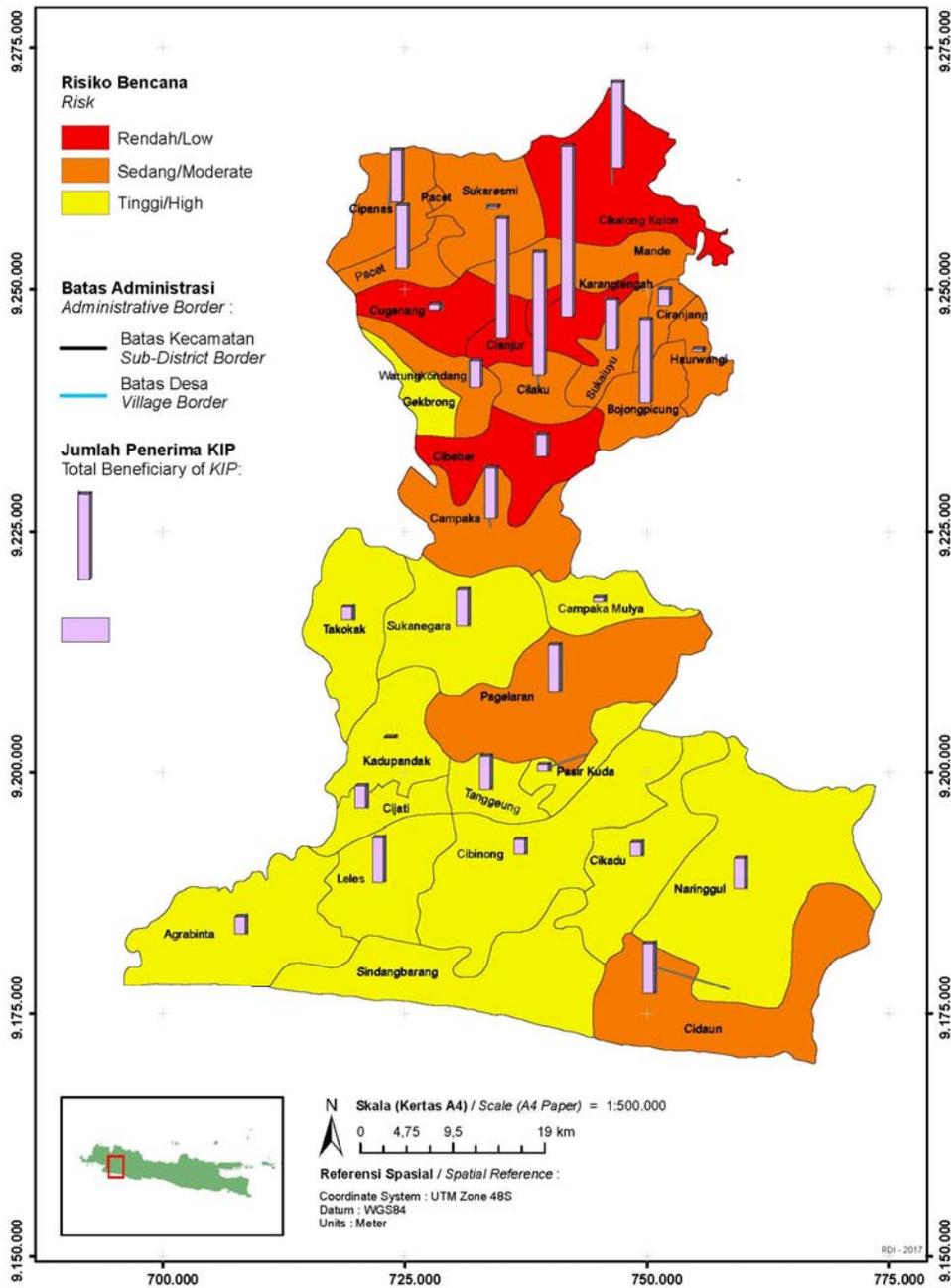


Figure 3 The mapping of distribution of Indonesia Smart Program and Disaster Risk in Cianjur District 2016

In implementation of PIP in Cianjur District there are some challenges that disturb this program. For instance, from beneficiary perspective, the financial aid for students are sometimes late to be given. Ideally this aid will be given after the end of semester however often the aid is given in the middle of new semester. In addition, the utilization of financial aid is still questionable. There are no definite proof and mechanism to ensure the utilization of this money. In some cases, there are several students who do not use this money for buy uniform, or books.

Another challenge is the transportation cost for students to get the cash to the bank is quite high, particularly for Southern Cianjur which have limited road infrastructure and accessibility. Due to location of the banks is usually near sub-district office, for several schools who have difficulty of accessibility because of road condition they need to pay some transportation cost. In fact, some area need more than one hour to go to bank and could spend for 50.000-100.000 IDR for motorcycle taxi (*ojek*). Therefore, the school help the requirement of PIP for student and even organized the student to collect the money from bank, usually took money from children due to cost of transportation. However, because of this method to collect the money arise controversy, school did not take money from students and use their private money.

Miss match of beneficiary is usually happen when the database of the receiver of aid did not collected thoroughly(18). In Cianjur, some people in communities feel that still happen. Particularly for them who did not understand how government choose the beneficiaries of PIP. The database of beneficiaries of PIP need to update thoroughly. Although, in the guidance of PIP there is mechanism to propose and report the problems and challenges of PIP, this mechanism did not work well. Therefore, miss match of beneficiaries who really need this financial aid in several cases arise the jealousy and envy among students even the family. One of factors that influence this situation is not every student and parent understand about this program clearly. The role of teacher is important in dissemination of information about this program.

The requirement document for PIP is quite many which make it difficult for students or even parents to fulfill it. Most of the cases, we found that teachers help their students to fulfill it. Particularly for school who located in remote area which sometimes could make them pay more to even find the foto-copy machine to duplicate some requirements. Therefore, schools usually collected the requirement and processed it for students. However, some times for school who have many beneficiaries this requirement could make teachers took overtime.

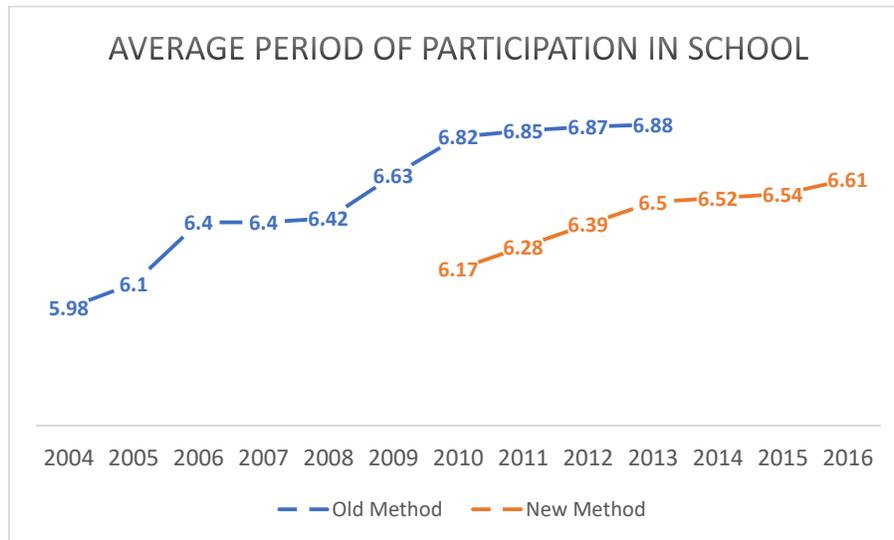


Figure 4 The average length of enrolment in school in Cianjur District

Source: ipm.bps.go.id

One of objective of PIP is increasing the enrollment rate to school and it could be assess with average period of participation on school (*rata-rata lama sekolah*-RLS). In Cianjur, due to BPS use new method to assess RLS there is different value of old and new method for several years such as 2010, 2011, 2012, and 2013, in general RLS increase by the years (figure. 4) from 6 (graduated from elementary school) when the BSM (predecessor of PIP) implemented. There are several factors which cause this increase. Other than PIP, national government also introduce several social protections which influence education in children such as PKH and BOS (Bantuan Operasional Sekolah-Aids for

*school operation*). It helps student to enroll to school without fee, particularly for elementary high-school and junior high-school.

Role of school for implementation of PIP is important in ensure this program work well and students get their financial aid. The teachers have additional task to ensure the beneficiary could access the aid. For instances, school help student in fulfill the requirement documents to submit to education agency and bank. Even, school to some extent have capacity to ensure the students to use the financial aid for what this program aims such as uniform, textbook, etc. For example, we find that a school develop a store for beneficiaries to buy their needs as student. However, this arise controversy that school took much profit in these goods when they sell to student. Therefore, this mechanism had not been done.

In Cianjur there are other social protection program which have similarities with PIP such as PKH. For instance, these both are cash transfer program, both have fix period, both have specific criteria, and both uses bank to distributed the money. However, PKH actually have small unit in managing the program in each district, Implementation Unit of Family Hope Program (*Unit Pelaksana Program Keluarga Harapan-UPPKH*)(19). The role of UPPKH in PKH are similar to role of School in PIP. School will help the beneficiaries in understand the program. It really helps the beneficiaries and parents to get the money, particularly for them who live in rural area and have limited capacity and access in information and education.

## **6. Discussion**

Social protection in developing countries usually face many challenge in implementation due to limited capacity of government in implemented it (13,16,18,20). In Indonesia, the mismatch of beneficiaries usually happened and arise jealousy among communities. The database of beneficiaries of every social protection in Indonesia who have many beneficiaries such as PKH and PIP need to updated annually and have work well mechanism. However, in some cases the feedback mechanism did not work well particularly for people in rural area who have limited capacity. This situation could be improved through seminar and workshop to increase the awareness communities about social protection to some extent. This could be included in annually villages plan thus the villages funds as embodiment of Villages Act No 4/2016 did not only use for physical development.

Social protection could give short term and long-term benefit. Social protection for short term usually contributed in coping strategies of communities and for long term contributed in building adaptive capacity of communities (21). Social protection had play important part in several recent major disasters in south Asia. Social protection could give support directly through financial aid for household. However, for longer time education could contributed greatly for community resilience.

Better education tends to associated with better health, better financially, and welfare. Not only that, education have important role in resilience. People with better education were faster in recovery process in the face of a major natural disaster such as tsunami than less educated people(3). In emergency situation, better educated people tends to make a better decision. In general, education give advantage for community resilience.

PIP as social protection on education have objective in short term to increase the enrollment ratio and increase the quality of life in longer term (9,22). The objective of PIP for a longer term is also contributed to resilience however it cannot be assessed because the program only implemented for about 4 years. However, PIP has mechanism to include the students which experience disaster as their beneficiary. Although this mechanism more tend to relief phase after disaster but it also gives possibility for released the burden of household. In fact, in Cianjur district, the number of beneficiaries of PIP actually are related positively with the level of risk in each sub-district (Figure 3).

Education always been a priority in the global commitment for DRR such as Hyogo Framework for Action (HFA) 2005-2015(23) and Sendai Framework for Disaster Risk Reduction 2015-2030 (24). PIP could be a powerful tool in increasing the knowledge of students on disaster and emergency situation. The resilience of student could be increased with the assisted of appropriate disaster management material in school. There are substantial efforts to integrated DRR in the education sector

globally(25,26). However, to integrate it in Indonesia, there are many challenges for it to work well(27). Despite of that , in West Java province, there are local curriculum which included of material for disaster situation. However, due to change of national curriculum this course could be erased. Some school in Cianjur district also provide a training for their student in disaster emergency situation. However, its really rare case. Safe School program which developed by education ministry and national disaster management agency could complimented PIP in strengthening the resilience of students. However, this program did not really implement to every school in Indonesia and only for chosen school in Indonesia.

## 7. Conclusion

Although, in implementation of PIP there are many challenges such as the mismatch of beneficiaries, delay transfer, and inadequate of cash. It cannot be denied that PIP help in reducing the vulnerability and the basic capacity of children in achieving community resilience in longer term. However, to influence the community resilience directly, particularly for beneficiaries (students), PIP need more intervention.

Complement intervention for PIP could strengthen the contribution to community resilience. For instance, the curriculum of school need to be adapted and contain about disaster material. Some schools have tried to use disaster management material, but it just on special cases which usually involved third party. Other than that, safe school program could be implemented in Cianjur District particularly for school which located in most vulnerable area.

## References

1. Flanagan BE, Gregory EW, Hallisey EJ, Heitgerd JL, Lewis B. A Social Vulnerability Index for Disaster Management. *J Homel Secur Emerg Manag* [Internet]. 2011;8(1). Available from: <https://www.degruyter.com/view/j/jhsem.2011.8.issue-1/jhsem.2011.8.1.1792/jhsem.2011.8.1.1792.xml>
2. Wisner B, Blaikie P, Cannon T, Davis I. *At Risk : Natural Hazards, People's Vulnerability and Disasters* [Internet]. Second Edi. Routledge. London and New York; 2004. Available from: <http://www.tandfebooks.com/action/showBook?doi=10.4324/9780203428764>
3. Frankenberg E, Sikoki B, Sumantri C, Suriastini W, Thomas D. Education, vulnerability, and resilience after a natural disaster. *Ecol Soc*. 2013;18(2).
4. Cecchini S, Madariaga A. *Conditional Cash Transfer Programmes: The Recent Experience in Latin America and the Caribbean* [Internet]. United Nations. Santiago; 2011. Available from: <http://eprints.utas.edu.au/4774/>
5. Heltberg R. Helping South Asia cope better with natural disasters: the role of social protection. *Dev Policy Rev*. 2007;25(6):681–98.
6. Handa S, Davis B. The Experience of Conditional Cash Transfers in Latin America and the Caribbean The Experience of Conditional Cash Transfers in Latin America and the Caribbean. *Dev Policy Rev*. 2006;24(6):513–36.
7. Valencia Lomeli E. Conditional Cash Transfers as Social Policy in Latin America: An Assessment of their Contributions and Limitations. *Annu Rev Sociol* [Internet]. 2008;34(1):475–99. Available from: <http://www.annualreviews.org/doi/10.1146/annurev.soc.34.040507.134537>
8. Lutz W, Kc S. Global human capital: Integrating education and population. *Science* (80- ). 2011;333(6042):587–92.
9. Kementerian Pendidikan dan Kebudayaan. *Petunjuk Pelaksanaan Program Indonesia Pintar Tahun 2017*. Jakarta; 2017 p. 39.
10. Thompson H. *Cash and Child Protection: How cash transfer programming can protect children from abuse, neglect, exploitation and violence*. London; 2012.
11. BNPB. *Indeks Risiko Bencana Indonesia Tahun 2013*. Cetakan Pe. Citereup-Sentul: Badan

- Nasional Penanggulangan Bencana; 2014.
12. Devereux S, Sabates-Wheeler R. Transformative social protection. IDS Work Pap. 2004;(October):36.
  13. A. Morley S, Coady D, Morley S, Coady D. From Social Assistance to Social Development. Targeted Education Subsidies in Developing Countries. World Development. Peterson Institute for International Economics; 2001. 1-136 p.
  14. Ampratwum E, Armah-Attah D. Tracking capitation grant in public primary schools in Ghana. Ghana Cent Democr Dev. 2010;10(1):1–8.
  15. Osei RD, Owusu GA, Asem FE, Afutu-Kotey RL. Effects of capitation grant on education outcomes in Ghana. Accra, Inst Soc Econ Res [Internet]. 2009; Available from: [http://www.researchgate.net/profile/Robert\\_Osei/publication/228871302\\_Effects\\_of\\_capitation\\_grant\\_on\\_education\\_outcomes\\_in\\_Ghana/links/0c96052287a3b36ec8000000.pdf%5Chttp://www.researchgate.net/profile/Robert\\_Osei/publication/228871302\\_Effects\\_of\\_Capitat](http://www.researchgate.net/profile/Robert_Osei/publication/228871302_Effects_of_capitation_grant_on_education_outcomes_in_Ghana/links/0c96052287a3b36ec8000000.pdf%5Chttp://www.researchgate.net/profile/Robert_Osei/publication/228871302_Effects_of_Capitat)
  16. Jones N, Ahadzie W, Doh D. Social protection and children: Opportunities and challenges in Ghana - Report. Unicef [Internet]. 2009; Available from: [https://www.unicef.org/wcaro/wcaro\\_3798\\_unicef\\_odi\\_Social\\_Portection\\_Ghana-full-report.pdf](https://www.unicef.org/wcaro/wcaro_3798_unicef_odi_Social_Portection_Ghana-full-report.pdf)
  17. Miller del Rosso J. School feeding programs: improving effectiveness and increasing the benefit to education-a guide for program managers. 1999.
  18. Drolet JL. Social Development and Social Work Perspectives on Social Protection. Routledge; 2016.
  19. Kharisma DD. Case Study of PKH ( CCT Indonesia ) in Sumba Barat and Kediri. In: Asian Social Protection in Comparative Prespective. Singapore; 2008. p. 1–21.
  20. Brooks S. Social Protection and the market in Latin America. Cambridge: Cambridge University Press; 2009.
  21. Davies M, Béné C, Arnall A, Tanner T, Newsham A, Coirolo C. Promoting Resilient Livelihoods through Adaptive Social Protection: Lessons from 124 programmes in South Asia. Dev Policy Rev. 2013;31(1):27–58.
  22. Dirjen Kementrian Agama Islam. Petunjuk Teknis Program Indonesia Pintar Untuk Siswa Madrasah Tahun 2016. 2016; Available from: [itjen.kemenag.go.id/sirandang/files/.../4413-6260cc99881a3e4b6cd22e311cab010](http://itjen.kemenag.go.id/sirandang/files/.../4413-6260cc99881a3e4b6cd22e311cab010)
  23. UN. Hyogo Framework for Action 2005-2015. Strategy [Internet]. 2005;(January):1–25. Available from: [http://www.undp.org/bcpr/whats\\_new/rdr\\_english.pdf](http://www.undp.org/bcpr/whats_new/rdr_english.pdf)
  24. UNISDR. Sendai Framework for Disaster Risk Reduction 2015 - 2030. Third World Conf Disaster Risk Reduction, Sendai, Japan, 14-18 March 2015. 2015;(March):1–25.
  25. Ronan KR. Advances and Continuing Challenges towards HFA2 and Post-2015: Background Chapter. Backgr Pap Prep 2015 Glob Assess Rep Disaster Risk Reduct. 2014;
  26. Ronan KR, Crellin K, Johnston D. Correlates of hazards education for youth: a replication study. Nat hazards. 2010;53(3):503–26.
  27. Amri A, Bird DK, Ronan K, Haynes K, Towers B. Disaster Risk Reduction education in Indonesia: Challenges and Recommendations for Scaling up. Nat Hazards Earth Syst Sci Discuss [Internet]. 2016;(February):1–28. Available from: <http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2015-344/>