

INTEGRATION OF DATA SYSTEMS FOR SOCIAL ASSISTANCE PROGRAMS; WHY AND HOW?

Executive Summary

A number of Social Assistance (SA) programs are currently implemented in Indonesia to reduce poverty. While these are good and necessary programs, the lack of integration in terms of data systems, targeting, modules and implementation leads to a high degree of inefficiency. We reviewed the current situation of the Family Hope Program (PKH), in relation to other programs and identified bottle necks to successful implementation and management. Based on the results of the assessment, new integrated android-based applications were developed to support PKH's data collection and management system, and strengthen the counseling function of its facilitators. In addition, the aggregated results from these application can be used by local governments to inform their decision making related to planning and budget allocations.

This paper provides recommendation for future improvements of the data systems used by PKH and the integration of data systems and implementation across programs.

Introduction

Now a middle-income country, Indonesia still faces serious problems. More than 28 million Indonesians still live below the poverty line and approximately 40% of the entire population (~250 million) remain vulnerable of falling into poverty, as their income hovers marginally above the national poverty line. [1]

Since the phasing out of the fuel subsidies in 2005, the Government of Indonesia (GoI) has created a number of targeted social assistance (SA) programs (see box) to support its overarching goal to reduce poverty.

Moreover, GoI prioritizes the establishment of a comprehensive social protection system for all citizens and improve targeting accuracy of the SA programs for the poor [2]. Its policy direction also discusses the need to (a) integrate several family-based SA schemes for poor and vulnerable families that have children, disabled, and elderly, in the form of Conditional Cash Transfers (CCT) and/or through in-kind assistance to support nutrition; (b) transform the rice subsidy for the

poor in a phased manner so that it becomes a more nutrition-focused program; and (c) structure temporary SA at the central and local level by improving the coordination and sharing of authority between ministries/institutions that implement temporary SA. Moreover, this inter-sectoral cooperation will also benefit other programs.

While overall, the impact of SA programs in Indonesia on poverty and inequality reduction is still limited [3], the CCT PKH Program is the most effective in terms of poverty and inequality reduction impact per IDR spent, but the lowest budget allocation [3]. Robust impact evaluations have already shown positive impacts of PKH in increasing food expenditures, health-seeking behavior, and education for poor families and their communities [4,5] These include increases in participation in elementary and secondary school, transition from primary to junior secondary school, prenatal visits, and complete immunization for children. Moreover, CCTs have been proven to not increase recipients' purchasing of

Current Social Assistance and related programs

Family Hope Program (Program Keluarga Harapan/PKH): Conditional Cash Transfer (CCT) and Family Development Sessions (FDS) focusing on health and education

Smart Indonesia Program (Program Indonesia Pintar/PIP): CCT scholarship targeting children aged 6-21 years from poor families, including PKH beneficiaries.

Healthy Indonesia Program (PIS): aims to improve the national health and nutrition status through community empowerment supported by financial protection and equitable health services.

Rice for Family Welfare (Beras Sejahtera/Rastra): subsidized rice for poor families (15 kg/family/month)

Smart and Healthy Generation (Generasi Sehat Cerdas/GSC), aims to empower communities through capacity building to increase the quality of basic services, particularly on health and education.

Family Welfare Movement (Program Kesejahteraan Keluarga/PKK) is a national movement with units down to the sub-village level, aiming at community empowerment to increase family welfare.

Posyandu (Integrated Service Post) is a Community-based effort to provide basic health services and improve the nutritional status of the community.

Building Families with Underfives Program (Bina Keluarga Balita/BKB) aims to increase knowledge and skills of parents related to growth and development of children under five.

Integrated Holistic Early Childhood Education and Development (Pendidikan Anak Usia Dini-Holistik Integratif/PAUD-HI) is an early childhood development program aiming to fulfill the essential needs of children aged 0-6 years in a simultaneous, systematic, and integrated way, combining pre-school (PAUD) with Posyandu and BKB.

Community-led Total Sanitation (Sanitasi Total Berbasis Masyarakat/STBM) focuses on behavior change related to sanitation. Communities are facilitated to conduct their own appraisal and analysis of open defecation (OD) and take their own action to become ODF (open defecation free).

alcohol or cigarettes or to discourage work [6].

Still, a number of challenges remain. This paper describes the current situation related to the data systems

used in PKH in particular and how these relate to common problems such as targeting, assessment of program effectiveness, program efficiency and coordination between the existing programs. According to World Bank calculations [3], IDR 31 trillion are spent yearly on these programs to reduce poverty and it is therefore of the utmost importance that the funds are allocated in a way that benefits the most people.

Approaches and Results

We reviewed the data systems of PKH and related programs, and conducted in-depth interviews with 49 PKH implementers as well as focus group discussions (FGD) with 45 stakeholders in six locations in North Sumatra, West Java and North Sulawesi.

PKH currently serves approximately 10 million households, recently upscaled from 6 million. To support this scale-up, a new data system was designed for the 4 million new households, called e-PKH, which has an android component for data validation and verification by the Facilitators and a web-based component for the Data Operators. Unfortunately, these two components are not compatible and data-sharing requires an external device or a data cable. In addition, the e-PKH platform, is not yet accessible for the Data Operators. Instead, the data are sent directly to the Ministry of Social Affairs (MoSA) at the central level for processing. In addition, the initial system (Sistem Informasi Management-PKH/SIM-PKH), which uses paper-based forms to collect data on the existing 6 million households, and the newer e-PKH are not compatible.

In some areas, insufficient numbers of computers with inadequate technical specifications to support the management of large amounts of

data combined with slow and unreliable internet connections to complicate the work at the district level. In addition, there are no proper standard operational procedures (SOP) related to data security, backup and recovery systems within the PKH program. Backups are important to safeguard the data in case of technical problems and some Data Operators have taken the initiative to make backups on external devices. In addition, sharing of usernames and password between Facilitators who need assistance and those who assist them forms a serious breach of data security.

Human resources are limited in skills to support their tasks. In particular we found a lack of computer-related and facilitation skills among PKH Facilitators. In some cases this was exacerbated by advanced age (>50 years) and limited educational levels. On the other hand, the shift in job description from data entry staff to data manager caused by the new e-PKH system, leads to miss-matching of the rather large number of data operators with limited skills in view of the increased technical aspects of their work.

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The monthly verification of health data only captures Posyandu attendance of the PKH beneficiaries, while no data on nutritional and health status are recorded. As a result, it is difficult for the PKH program to claim an impact on these indicators, and is limited to reporting increasing Posyandu attendance rates of pregnant women and children under the age of five [3].

The different SA programs fall under different ministries, use different data sources and approaches to target their beneficiaries, which leads to targeting issues. In turn, the over-targeting of some families causes aid-dependency, while other families remain untouched.

Currently there are no mechanisms for cross-program coordination and data sharing.

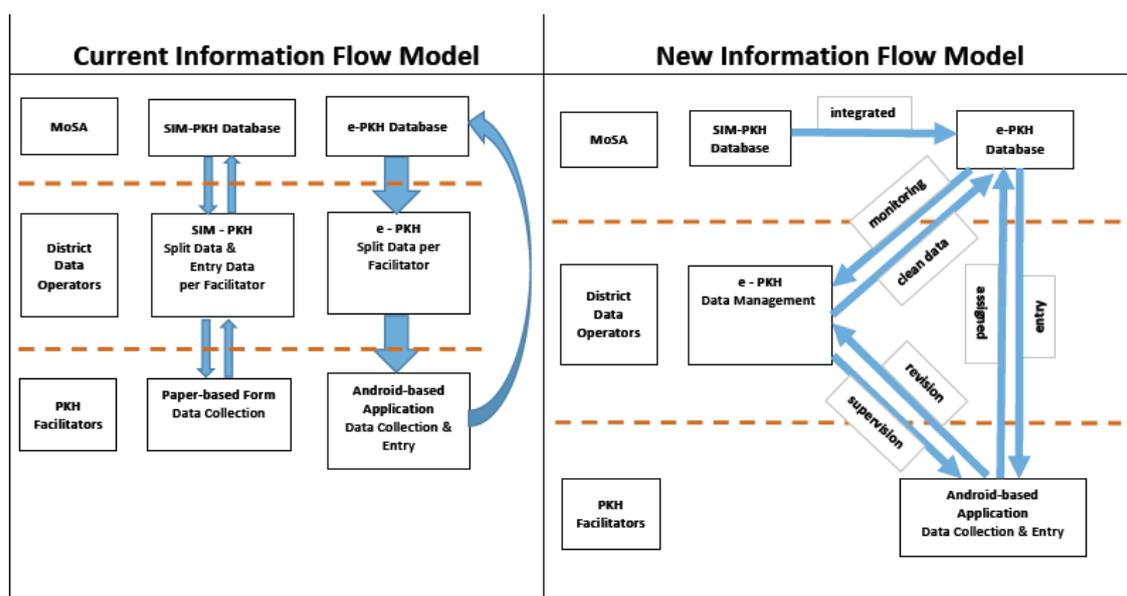


Figure 1 Current and Future Information Flow Model for PKH

The development of integrated android-based e-PKH application

To address the issues related to health and nutrition data availability and the PKH database system, and to lay the ground work for integration of data across programs, an integrated android-based e-PKH application was developed, consisting of four sub-applications: nutrition, immunization, early childhood education and WASH (Figure 2).



Figure 2 Maternal and Child Nutrition Status Monitoring Information System Tools

The Maternal and Child Nutrition Status Monitoring Information System Tools are designed to integrate the PKH data collection system on the health and nutrition (and education) status of PKH beneficiaries. Entering the data in the application will trigger risk flags such as 'anemic pregnant woman', 'does not consume iron supplementation', which in turn will generate appropriate key messages to be used in counseling (Figure 3).

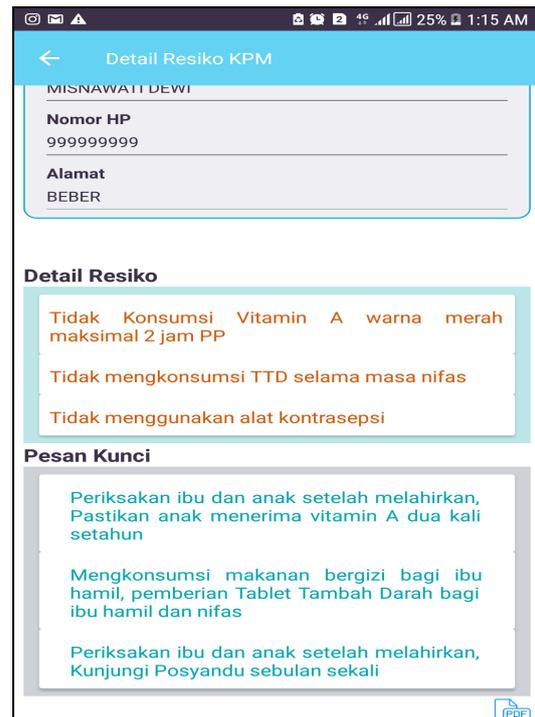


Figure 3 Example of Detailed risks and suitable key messages maternal form

The same principle is used in all sub-applications.

The applications were tested by six facilitators in Bolaang Mongondow district in North Sulawesi. Their feedback showed that the applications were easy to use and quicker to complete than the paper-based forms. In addition, the data can be stored locally on the cellphone and uploaded once there is internet connection. The applications provide summary data as well, but these are limited to process indicators such as Posyandu attendance rates. Unfortunately the technical specifications of the cellphones used by facilitators do not support the generation of aggregated data. This however can be done by the Data Operator and fed back to the Facilitators (see **Table 1** for example). These results will be useful to support village leaders for planning and budgeting purposes. The usefulness of the applications for counseling was not part of the field

test and needs to be piloted at the next stage.

Table 1 Summary of Selected Data Field Test Integrated Application

Underfive H&N (n=87)¹	n	%
Birth Weight >2500 grams (n=42)	42	100%
Underweight (n=45)	5	11%
Normal	40	89%
Stunting (n=14)	4	29%
Normal	10	71%
Exclusive Breastfeeding	68	78%
Received age-appropriate Vitamin A	9	10%
Complementary Feeding	1	1%
Intestinal parasites	4	5%
ECE (PAUD) (n=73)		
PAUD available	11	15%
Child registered at PAUD	3	4%
Routine attendance	2	3%
Communication PAUD-Parents	1	1%
WASH (n=94)		
Place for waste disposal	28	30%
Access to clean water	90	96%
Own Latrine	45	48%
Handwashing with Soap	87	93%
Vector control	47	50%
Consumption Vegetables and Fruit	48	51%
Physical activity of mother (10-30 ¹ /day)	26	28%
Protection against Cigarette Smoke	42	45%

Conclusions

A Data Management System (DMS) embraces the whole range of activities involved in the handling of data from the entry point up to the server and use of data [7-9].

There are problems related to the data integration and synchronization between the android e-PKH application used by the PKH Facilitators and the e-PKH web-based application used by the District Data Operators. Moreover the existence of two separate systems (SIM-PKH and e-PKH) does not support successful program implementation.

In order to be effective the data management system should consider

¹ Not all children had complete data and it is likely that among those without data suboptimal nutritional status was more common.

to (a) Use standard data definitions and formats (International or National), (b) Define quality standards and apply appropriate validation processes for each dataset, (c) Adopt formal Query and Change Management procedures, and (d) Ensure that data are quality assured prior to use or release. In addition, an interface system should be built-in to integrate and synchronize the data between the cellphone application and web-based application of e-PKH.

The lack of computers with sufficient technical specifications and poor internet connections are major restricting factors for the District Data Operators, while some Facilitators still use cellphones with only 1GB RAM, which causes their phone to repeatedly crash.

Currently, the H&N data collected by the PKH Facilitators are limited to attendance of Posyandu, rather than the actual nutrition status of beneficiaries. In addition, other data platforms available like data on WASH ('SMART STBM'), immunization and ECE are not yet integrated in one data platform. This is a missed opportunity to provide an integral picture of the beneficiary households. However, database integration is not entirely straightforward, as these databases only contain aggregated data at the sub-district level.

The large variation in skills, knowledge and performance of PKH program personnel causes disparities in program implementation nationwide, which in turn will negatively impact the potential impact of the program as a whole.

The different modules of the FDS sessions of the PKH program, of which we assessed H&N and Education, and even the topics within these modules are not integrated in terms of messages and visuals, as well as in terms of the data collected.

Looking beyond the boundaries of a single program, there are two major ways in which PKH can support the integration of existing Basic Social Service (BSS) programs: by strengthening the existing roles and activities at the Village/Sub-district level and through sharing and integration of the data system.

PAUD-HI and BKB programs include parent education sessions quite similar to the FDS sessions of PKH, which forms an opportunity for integration. The modules developed for PKH are well-thought through and could be used in different programs without the need to re-invent the wheel. In addition, these modules can be used by health staff, such as midwives and nutritionists, in their education sessions such as the regular Nutrition and Pregnancy Classes. This will reduce some of the workload of the PKH Facilitators while ensuring the topics are explained by professionals.

The data that will be collected through the new application can support not only PKH, but can also be used by other programs, the MoH as well as the village level planning forum as a basis for their decision making.

Recommendations

Information Management System

1. The SIM PKH should be integrated with the e-PKH into one large **database management system** to streamline program implementation, improve data quality and reduce workload. SOPs to address issues related to backup, data security and recovery system should be put in place.
2. The **technical specifications** of computers and mobile phones, as well as the internet connection, should be adequate to support the program.
3. A **coordination forum** at the national level between MoSA and other stakeholders should be established to discuss the integration of the data and the program implementation at the community level. Such a forum will enable regular data sharing and feedback between stakeholders, prevent duplication of data collection and ensure one integrated database, as well as streamline the grass-root level implementation.
4. The newly developed applications present the possibility to provide **summary data** on the status of the beneficiaries for planning and budget allocation purposes at the village level.
5. Prior to implementation, the newly developed applications should be **piloted** among a large sample of Facilitators and beneficiaries, representative of different areas in Indonesia. This pilot should include an assessment of the extent to which the applications are useful to support the facilitators' counseling tasks, and data integration and synchronization with the e-PKH application.
6. While previously the role of the District Data Operators (DDOs) focused on data entry, the introduction of an android-based system requires fewer staff with more advanced **data management skills**. In addition, to support the migration from SIM-PKH to e-PKH, the recruitment of technical experts such as data analysts and programmers should be considered.

Program Integration

7. Strong political will is needed to integrate the social assistance and BSS programs in line with the RPMJN 2015-2019. An **overarching policy**, preferably a Presidential Instruction, describing the roles and responsibilities of all relevant ministries and institutions, appointing a leading sector and detailing coordination mechanisms, can form the basis for this integration.
8. The establishment of **coordination forums** at the district and sub district levels, including program staff, local government and community leaders for program coordination and integration, data sharing, and problem solving is essential for program convergence.
9. PAUD-HI could be considered as the **implementation point** for SA programs such as PKH, Posyandu, BKB, and GSC. The FDS for PKH beneficiaries could be combined with the BKB parent education sessions or Posyandu “Kelas Ibu”, while capacity building and institutionalization could be addressed by GSC.
10. The use of a **central database** is crucial to streamline existing SA and BSS programs. The TNP2K integrated database can be used as a basis to build this database to facilitate data sharing across programs.
11. The **integration of the programs** will also eliminate the need for a multitude of membership cards. The Family Welfare Card (KKS) can be adapted to access the different types of BSS programs. All eligible households (e.g., 40% poorest in the population) should have access to Rastra, PIS and FDS (subsidized rice and healthcare, and education for families). Among these households, those with pregnant women and/or children under-five would be eligible for PKH (CCT focused on nutrition) and those with school-age children for PIP (CCT). This increased focus of targeting will lead to increased efficiency, and the funds saved this way can be used to increase coverage.

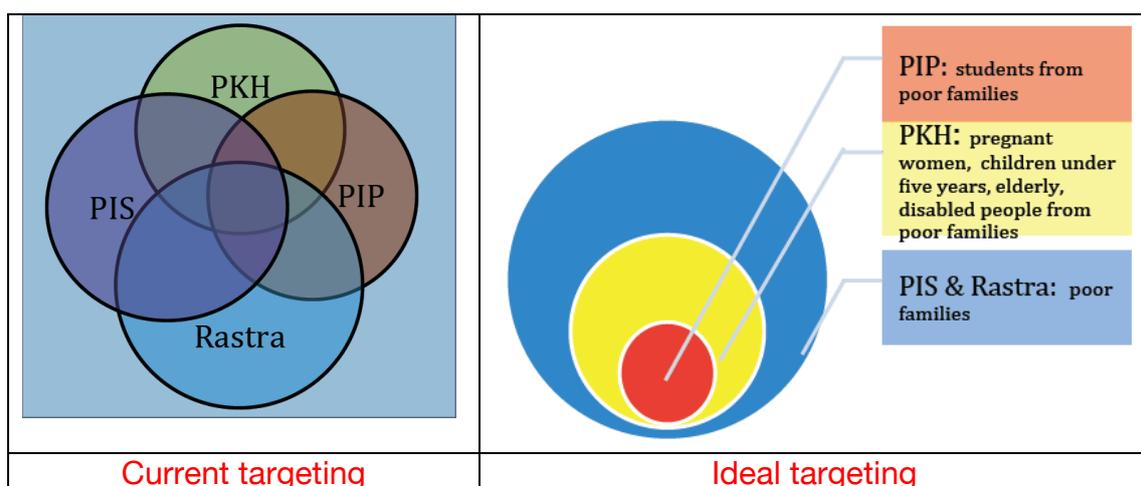


Figure 4 Current and ideal targeting through integrated programs

References

1. <http://www.worldbank.org/en/country/indonesia/overview>
2. Bappenas. *Rencana Pembangunan Nasional Jangka Menengah 2015-2019 (National Mid-term Development Plan/RPJMN 2015–2019)*. <http://www.social-protection.org/gimi/gess/RessourcePDF.action?ressource.ressourceId=50077>
3. World Bank. 2017. *Towards a comprehensive, integrated, and effective social assistance system in Indonesia (English)*. Washington, D.C. : World Bank Group.
<http://documents.worldbank.org/curated/en/535721509957076661/Towards-a-comprehensive-integrated-and-effective-social-assistance-system-in-Indonesia>
4. World Bank, *Program Keluarga Harapan: Main Findings from the Impact Evaluation of Indonesia's Pilot Household Conditional Cash Transfer Program*. World Bank, 2011.
5. TNP2K, *Evaluation Longer-Term Impact of Indonesia's CCT Program: Evidence from a Randomized Control Trial*. 2015.
6. Banarjee, A., Hanna, Rema., Kreindler, Gabriel., Olken, Benjamin A., , *Debunking the Stereotype of the Lazy Recipient: Evidence from Cash Transfer Programs Worldwide*. Working Paper No 308, 2015.
7. Intra-governmental Group on Geographic Information, *The Principles of Good Data Management 2000*.
8. Leopoldi, R., *IT Services Management: Data Management Process*. White Paper, 2002.
9. Group on Earth Observation, *Data Management Principles Implementation Guidelines*. GEO-XII Plenary 2015.