



Data dan Informasi Bencana Indonesia

Introduction

Drawing impetus from the devastation of the December 26 2004 Indian Ocean Earthquake and Tsunami, the disaster management paradigm shifted from disaster response to disaster risk reduction (DRR). This shift occurred both at the international level and within Indonesia. The disaster management communities were galvanized into ensuring that recording, monitoring and analysing the trends evident in the occurrence, magnitude, and the impact of disasters were effectively implemented. To further understand the human impact of disasters and also better account for disasters as a destroyer of development gains, it is essential to understand the historical evidence of disasters. Through understanding this, the wider international humanitarian development community can contribute to the discussion of how to better equip vulnerable communities and governments with the capacity to identify hazards and risks, reduce the identified risks, while still preparing for disasters and planning for development.

The adoption of the HFA1 in 2005 and the establishment of the GRIP alliance (the Global Risk Identification Programme) in early 2006 were both timely and mutually beneficial. Support by the UNDP Regional Bureau for Crisis Prevention and Recovery

and the UN ISDR led GRIP to adopt the Latin American LARED2-developed-DesInventar software for tracking historical disaster impacts across the region. Compilation of country-specific data from government and non-government sources subsequently gained political traction and the financial support it required.

In Indonesia, in 2005, the DesInventar was housed within UNDP Indonesia, and was prepared for handover to the Government of Indonesia (GoI). In 2006, initial attempts to transfer the data, software and ownership of the DesInventar to the GoI were met with reticence. This reticence was partially based on the existence of similar inventory databases at individual line ministry levels, as well as ineffective marketing of the DesInventar methodology: DesInventar is a powerful data and information management tool already tested in a multitude of other countries, and not merely another database. The GoI, in this case, BAKORNAS PB (the previous Disaster

¹ The World Conference on Disaster Reduction was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, and adopted the present Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (here after referred to as the "HFA"). The Conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities [1] and risks to hazards. [2] It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters.[3] Source: <http://www.unisdr.org/eng/hfa/hfa.htm>

Management Coordinating Agency) lacked an operational mandate to takeover the ownership of the DesInventar historical data, and this was further compounded by the absence of the government's recognition of the validity of the data. In 2006, the legal reform of the Disaster Management structures of Indonesia was gaining traction but there remained a legal vacuum and hence acceptance of the DesInventar was met with trepidation by the potential government owners: the government departments either lacked the authority, capacity or willingness to become custodian of the database and its considerable 'non-validated' data. (See Lessons Learned: Disaster Management Legal Reform – The Indonesian Experience.) Moreover, the timing of the intended handover of the database was poorly planned and executed: there was little incentive for the authorities to accept responsibility; the authorities were ill-prepared to comprehend the potential power of DesInventar as an information management tool for advocacy, planning and resource mobilisation purposes; and, most importantly these government authorities were unsure of impending legal reform and the impact on each authorities' mandates.

The lessons learned through the evolution of DesInventar into the now nationally-owned Indonesian Disaster Data and Information Database (DIBI) – can provide the broader development community, as well as other national governments, with insights into the utility of the information management tool and the politics of establishing such a comprehensive and powerful information tracking tool. Perhaps most importantly for Indonesia, the sub-national governments – the provinces, the districts and sub-districts – will understand the purpose of establishing sub-national 'DIBI-type' information platforms that are linked into the national DIBI and can clearly illustrate the costs of disasters in terms of losses in development progress. These administrations can be supported by DIBI in leading the process of embedding disaster risk reduction, as relevant to their jurisdiction's context, in their own development planning. With this end in mind, DIBI was finally launched as a nationally-owned database in 29 July 2008, and is housed within the newly established National Disaster Management Agency (BNPB).

² LARED is the Network for Social Studies in Disaster Prevention in Latin America. Source: www.eird.org/eng/revista/No14_99/socios5.htm

What was the situation like prior to DesInventar and DIBI?

4

As noted in the introduction, there were numerous government data collection actors including: BAKORNAS PB (the previous National Disaster Management Coordinating Agency), BAPPENAS (The National Development Planning Agency), the Coordinating Ministry for Peoples' Welfare, Ministry of Social Affairs, Ministry of Health, Ministry of Education, Ministry of Defence, the National Police, the military forces, the BPS (the National Statistics Agency) as well as the respective subordinate line services and bureaus at the sub-national level (in the provinces and districts). Complicating matters further, the devolution of government administrative responsibilities to the districts and provinces as part of Indonesia's Regional Autonomy Legislation (Law 22/1999 and Law 25/1999, amongst others) meant that data collection responsibility was unclear, while simultaneously a multitude of new provinces and districts were being established. (The number of provinces increased from 27 in 1999 to 33 in 2008. The number of districts increased from approximately 340 (various types of administrative arrangements for different cities / regions) in 1999 to reach 492 autonomous administrative districts in 2008.1)

With the passage of Law 24/2007 on the establishment of the National Disaster Management Agency (BNPB), the BNPB now has the mandate to collect and analyse information on the occurrence and impacts of natural disasters in Indonesia. (See Lessons Learned: Disaster Management Legal Reform.) DIBI historical data is being used by BNPB for risk identification, policy formulation and decision making, ultimately ensuring that funds are channelled to risk reduction based on the trends and patterns identified through DIBI-based analysis. This type of analysis benefits all stakeholders, focussing attention on disaster risk initiatives in a coherent manner across the country.

What is DesInventar and how did it evolve into DIBI? Who was involved?

'DIBI' is the Indonesian acronym for the Indonesian Disaster Data and Information Management Database developed using the DesInventar and DesConsultar software and methodology. The DesInventar module is a relational and structural database through which the database is populated in predefined fields (space and temporal data, types of events, etc.) and the direct effects (losses of human lives, houses, infrastructure, economic activity). The DesConsultar module allows access to the database by queries that can include relations among the diverse variables of effects, types of events, locations, dates, etc. This module simultaneously allows representation of the answers to those queries in tabular or graphical form and thematic maps.⁴

The DesInventar software is one of the very few existing proven methodologies for building disaster information management systems allowing the homogeneous capture, analysis and graphic representation of information on disaster occurrences and losses. Since its inception in 1993, when the Network for Social Studies on Disaster Prevention in Latin America (LA RED) started to build a systematic disaster inventory database, continuous improvements and

thorough testing have been carried out. Many national agencies in Latin America and elsewhere are using DesInventar to assess risk, plan risk mitigation, and design early warning systems. Additionally the DesInventar methodology is increasingly being applied to monitor risk reduction measures, and evaluate preparedness and mitigation plans.

Driven by the UNDP Regional Bureau for Crisis Prevention and Recovery (RBCPR), UNDP Indonesia utilised DesInventar in the post-tsunami response in part to introduce international standards for data collection and information management for disasters in the absence of a national comprehensive system at that time. Together with BAPPENAS, BAKORNAS PB (now BNPB), the Ministry of Home Affairs and DFID, UNDP's SC-DRR programme, has supported the devolution and application of DesInventar methodology in Indonesia. The UNDP RBCPR in Bangkok has provided necessary back-stopping by way of software installation and set up, technical training and overall guidance and support. UN RBCPR has provided regular opportunities for BNPB, BAPPENAS and other government personnel, to participate in regional learning events. All of this support has driven knowledge transfer and built the momentum to establish DIBI.

¹ Source: National Bureau of Statistics - www.bps.go.id

² Source: www.DesInventar.net



From left to right: UNDP Country Director – Mr. Hakan Bjorkman, Director for Special and Rural Region, National Development Planning Agency as SC-DRR National Program Director – Mr. Suprayoga Hadi, Head of BNPB – Mr. Syamsul Ma'arif and Head of BNPB Center of Data and Information – Mr. Priyadi Kardono

UNDP and the SC-DRR programme have supported the compilation and validation of large volumes of through the disaster information management tool, DesInventar, which culminated in the launch of DIBI (Indonesian Disaster Data and Information) on 29 July 2008 by the head of BNPB, Dr. Syamsul Ma'arif. It can be accessed online at: <http://dibi.bnppb.go.id>

Currently, the data available online in DIBI is based on official government data for the years 1997-2007. The DIBI team has begun to collect data on disasters that have occurred over the past 30 years at the provincial level in an agreed format. Orientation and training continue to be provided to personnel in the provinces to collect and input disaster data. At the

same time, BNPB have formed a Data and Information Forum which provides a platform for all key stakeholders to discuss and agree on issues of disaster-related data. Through this forum, BNPB works with stakeholders to collect and validate disaster data and ensure its availability to all parties via the DIBI.

Sources of data for the DIBI have been drawn from the former sub-national units for disaster response coordination - Satkorlak PB (Provincial Units for Disaster Response Coordination) and Satlak PB (District Units for Disaster Response Coordination). Satkorlak PB will transform into BPBD by the end of 2009 and Satlak PB will transform into BPBD at the district level where risk of disaster is deemed to be high in that particular district. The methodology for the analysis of data, compilation of information and derivation of knowledge has been enhanced by the combined forces of the Agency for Research and Application of Technology (BPPT), National Institute of Aeronautics and Space (LAPAN), BMKG (Agency for Meteorology, Climatology and Geophysics), National Mapping and Survey Coordination Agency (Bakosurtanal), and Department of Energy and Mineral Resources (DESDM).

Since its launch in 2008, the DIBI information management system has been gradually introduced at the national level of government through socialisation / familiarisation workshops. Recently, several provinces have also conducted socialisation / familiarisation workshops, namely, Central Java, Yogyakarta, Aceh, and Bengkulu. Eastern provinces in Indonesia are scheduled to have DIBI socialisation / familiarisation workshops in the second half of 2009. In addition to the socialisation / familiarisation workshops, the SCDRR and BNPB DIBI teams are conducting FGD's as a follow-up to the initial socialisation workshops: these FGD's are intended to allow better interactive opportunities for the participants to raise questions, seek clarification and propose context-based modifications for the particular needs of the respective stakeholders, whether they be national level or sub-national level. DIBI, as a historical disaster data analysis tool, can help governments and other stakeholders to plan better development programmes and secure their investments. DIBI-based analysis of the impacts of disasters in a particular location and context provides a better understanding of what regulations, actions, or other initiatives are required to reduce disaster losses.

The Data and Information Forum, hosted by BNPB, now consists of more than 12 government agencies / services. Participants in the forum include the police, military, public works, social services, health department, and education department. The forum has provided the opportunity to share experiences and build the coalition necessary for a common framework such as DIBI to be implemented country-wide. At the forum in March 2009, the grouping was joined by the BPS (National Statistics Bureau), an additional directorate from within the health service and representatives from the department of agriculture. This expansion of representation indicates a widening awareness of DIBI and also a wider acceptance of DIBI as a powerful information management tool: not merely from within the ranks of the traditional disaster-response actors, but now also within the wider planning and operational structures of the government.

How is DIBI being used? By whom?

BAPPENAS and BNPB established the disaster event information system called the Indonesian Disaster Data and Information (DIBI), now formally adopted by the GOI, for use as a cross-sectoral historical database of disasters in all districts and provinces of Indonesia. It is expected that in the medium-term, BNPB and the BPBD's can populate this online disaster information management tool so that it covers all the provinces and can be utilised by all relevant parties. Ultimately, the DIBI, at national and sub-national level is expected to: raise capacity for disaster management planning at every stage of the disaster management cycle; support disaster reporting and monitoring; and, provide information on disasters for government and humanitarian actors in Indonesia and other countries.

The national DIBI will soon include the results of Indonesia's first national disaster risk assessment, and is already being used as the basis for national DRR policy, budgeting and development planning decisions. DIBI will provide information for reporting on the implementation of the HFA. DIBI already provides details of losses for some of the provincial and district level, which when coupled with the national disaster risk assessment will enable a more in depth analysis of the progress made in reducing

losses through the implementation of preparedness / mitigation programs and capacity development initiatives.

The SCDRR programme has already used DIBI to identify Hazard Prone areas across Indonesia. The Hazards Prone Index considers nine disaster types across all provinces and districts based on historical data. The Hazard Prone Index can potentially be the basis for decisions on which districts should have its own BPBD. See Figure 1. below, and <http://gis.sc-drr.org/?p=440> for a map of Hazard Prone Areas at the district level.

Review of web-traffic for the DIBI site in November 2008, February 2009, and June 2009, indicates a steady increase of page views and time spent on the site. Individual IP address tracking indicates that the number of users doubled in the period. New visitors, based on IP address tracking, account for 40% of the traffic over the three quarters of web-traffic data. There is a return visit rate of approximately 30% and a corresponding trend of increasing time spent on the site as visitors become more familiar with the interface. The majority of users can be identified as BNPB, line ministries, and sub-national administrations: a product of the socialisation / familiarisation workshops,

FGD's and trainings delivered to both national and sub-national stakeholders. Most visitors to the site were using the research / results functions, with lesser page views of graphics and maps. There is also evidence that increasing numbers of repeat users are utilising more sophisticated search functions, such as, thematic searching by risk type and district to assess historical losses and damage and potentially prioritise risk reduction measures. Web statistics and anecdotal evidence indicate that academics are accessing and using DIBI for research

purposes and university students also have been making use of the DIBI. The diversity of the visitors is also increasing: international visitors from more than 10 countries account for approximately 10% of all visits.

DIBI has been used to inform policy such as when the government used the analysis of flood prone areas to develop a list of districts that are subsequently being encouraged to establish their own BPBD at district or municipal level. Despite political and bureaucratic sensitivities, this



Figure 1. Map - Index of Disaster Prone Areas in Indonesia

type of information is also being utilised by the Ministry of Finance and BAPPENAS to assign a budget line in the General Budget Funds thereby paving the way for fund disbursements to the districts that establish BPBDs.

Within BAPPENAS, the Directorate for Poverty Eradication, issued the NPD SCDRR (concurrently the Director of Underdeveloped Regions within BAPPENAS), to apply prioritisation based on disaster prone areas. This prioritisation of disaster-prone areas should be carried-out for all SCRR activities, as well as other donor funded programmes. Other donor-funded programmes include: PNPM Mandiri: Rural Development Programme (PPK); Urban Poverty Handling Programme (P2KP); Underdeveloped and Special Regions Development Acceleration Programme (P2DTK); Rural Infrastructure Development Programme (PIIP); and, the Regional Socio-Economic Infrastructure Development Programme (PISEW). Essentially this is aimed at improving the data in DIBI to assess the level of vulnerability in regions, and the risk exposure. The process has begun to incorporate the data sourced from the Forum Data and Information members to include school age children, health status, infrastructure, public facilities, income levels, types of livelihoods and

some spatial planning data. This will enable better targeting of programmes to reduce disaster risk within the most vulnerable areas. In addition to these BAPPENAS examples of DIBI-usage, it is also planning to use the same methodology to monitor the impact of the global economic crisis.

The UN ISDR is pushing ahead with efforts to link poverty and disaster risk and will utilise DIBI for data analysis, eventually linking it to the International Emergency Events Database (www.emdat.net) allowing for international comparative assessment of vulnerability to disasters by type and socio-economy impact data.

SCDRR in collaboration with BNPB has developed two distinct training modules, both requiring one day: Data Input Training and Data User Training. The Data User Training is intended to provide users with the skills necessary to effectively make queries - using DIBI for research and analysis purposes. The Data Input Training is designed for those within the national and sub-national government that will be responsible for input of data. At the national level, data will feed into the national DIBI. At the sub-national level, each BPBD will have its own DIBI-style information management system that can then be linked to the national level DIBI.

At the national level, Data User Training has been provided for those mentioned in the Data and Information Forum, as well as PNPB Mandiri⁵ actors, the World Bank, and the Coordinating Ministry of Peoples' Welfare. Whilst, at the sub-national level, the training is intended to be demand-driven, dependent on the provincial or district requirements, and based on the national disaster risk assessment and the priority determined by the Hazard Prone Index. It is envisaged that provincial and district level development planning, such as Regional Medium-term Development Plans and Annual Work Plans, will refer to the provincial / district DIBI data and the national DIBI to integrate DRR into these plans. Several national and sub-national ministries and line service agencies have requested training, both Data Input and Data User, to be provided by BNPB.

Currently, BNPB is in the process of working with selected provinces such as Yogyakarta, Central Java, Bengkulu and Aceh to establish provincial DIBI systems. (See Box 1 and 2 below.) A launch is being planned for DIBI-Aceh in October 2009 in conjunction with Data User Training for provincial DRR related agencies and the Tsunami and Disaster Mitigation Research Center (TDMRC).

As mentioned above, the sub-national DIBI development process has begun: SCDRR is targeting four provinces to have capacity and technological infrastructure for their own DIBI – style disaster information management system established by the end of 2009, including Yogyakarta (DIY) and Bengkulu Provinces. (See Box 1 and 2 below.)

⁵ PNPB Mandiri is the World Bank / Government of Indonesia Programme: National Programme for Community Empowerment

How will DIBI be further developed and enhanced?

12

In the coming years, as provincial and district level BPBD's are established, BNPB will support the sub-national administrations to implement DIBI with training for Data Users and Data Input: following the Bengkulu model noted above in Box 1.

Once BPBD's are established and the DIBI-style systems are adopted, training and technical support will be made available. (See Box 2, below for comments on Yogyakarta's (DIY) Provincial DIBI launch and comments on its current utility and intended further development.)

Box 1: The Bengkulu Model for Sub-national DIBI

On 21 April, 2009 the BNPB, supported by SCDRR conducted a socialisation/familiarisation workshop event in Bengkulu Province with the aim of implementing DIBI at the provincial level. The workshop was attended by 42 representatives from all local government units, universities and NGO's. The aim of the workshop was to garner



DIBI Socialization in Bengkulu

support from the provincial government personnel to utilise DIBI at provincial level to analyse disaster trends and impacts in a systematic manner thereby leading to better prevention, mitigation and other preparedness measures and a reduction in the severity of impacts on the populace.

Bengkulu's first socialisation event was particularly successful, engaging broad participation from all sectors of the local government, local NGO's and academia. The SCDRR programme aims to assist BNPB devolve DIBI to provincial and district level through a series of planned events: socialisation/familiarisation, FGD, then training for Data Users and Data Input. The second step in this process, FGD, is scheduled for October 2009, and is intended to apply DIBI methodology to the context in Bengkulu by emphasising the importance of equipping the local DIBI with 30 years of disaster data and thereby enabling comprehensive analysis of the disaster trends in Bengkulu. A follow-up workshop will be held to finalise adjustments to the local DIBI and compile additional historical data. The local government, in this case in Bengkulu province, will select the participants for DIBI training. It is anticipated that by early 2010 training for Data Input will have taken place and by the middle of 2010, 30 years of data will be electronically available for analysis. Data User Training will be conducted in parallel with the data input progress: thereby enabling data cleaning and debugging while the DIBI is populated.

The planned Bengkulu Model for Sub-national DIBI is intended to drive DRR initiatives, embed local ownership of the data and local DIBI, while also reducing the burden on BNPB to collect regionally-held data. The local DIBI will be owned by the BPBD and eventually linked to the national DIBI, allowing for comprehensive intra-province and inter-province comparisons.

Box 2 : Yogyakarta Province (DIY) launches DIBI Jogja.

"Disaster data and information management is a major element of disaster management. Not only does the availability of disaster data and information help stakeholders to focus on disaster risk reduction efforts in disaster prone areas, it also enables comprehensive and integrated disaster management planning," noted the Vice Governor of DIY, His Excellency Paku Alam IX at the launch of DIY's Disaster Data and Information Management Database (DIBI Jogja) on July 31st 2009.



DIBI Jogja Launching Ceremony

Since the major earthquake of 2006, DIY has endeavoured to enhance its capacity to track data and information on disasters. But only now, with the support of SC-DRR, the DIBI Jogja has been launched. Mr. Danang Samsurizal of the Regional Development Planning Agency (BAPEDA DIY) lauded the launch: "Finally, we have a structured system to capture the historical data and information in a manner that allows accurate analysis of disaster trends and highlights the

need for disaster risk reduction in development planning."

In a concerted effort to enhance disaster management through better information management, BAPEDA DIY and BNPB, with the support of the SC-DRR programme, began the process with an initial socialisation workshop about 'DIBI Jogja' on June 27th 2009. The workshop was attended by representatives from government institutions, universities, and local NGO's and the agenda included the first public presentation of the proposed DIBI Jogja and its draft structure. The draft included some initial adaptations for the local context. From 2003-2008, data collection was mandated to the BAPEDA DIY and provincial Kesbanglinmas (Office of National Unity and Community Protection) and these offices have collected data on disasters down to the village level but not in common structure and not in away that permits disaggregation. The disaster data prior to 2003 is being collated by a consultant funded by the SC-DRR programme. That data is being collected from the SATLAK's (Disaster Response Units) and combined with data held by UPNV DIY (Veteran's National Development University). The preliminary data was presented for verification at a FGD on July 17th 2009 which was attended by government institutions, universities, and NGO's. As a result of the stakeholder discussions, it was agreed that DIBI's capacity to capture historical data made it the ideal database to combine data from UPNV DIY, permit verification of all data, and finally provide a structured means of information analysis - using the DesInventar methodology: overcoming the previous 'structural' limitations on the analysis of disaster information.

In accord with the Presidential Decree directing all provinces to establish BPBD's in 2009, the government of DIY will establish its own BPBD in 2009 and DIBI Jogja will be owned by the BPBD and be a central reference and planning tool for this new disaster management agency. "The BAPEDA welcomes the opportunity to be one of the first provinces in Indonesia to have their own DIBI," concluded, Mr Danang Samsurizal of BAPEDA DIY.

Now, in 2009, the sub-national government agencies still submit hardcopies of disaster event data to the higher government authority, i.e. the provinces submit hardcopies to BNPB and the district administrations submit their hardcopies of disaster event data to the provincial administrations. In the future, all BPBD's will collect and report electronically to the provincial and national administrations: this will represent a major leap in efficiency in terms of data input at the national level and improvements in the accessibility of timely, validated disaster information.

In the socialisation workshops thus far, the participants have been apprised of current BNPB developments, such as ICT systems and DIBI. BNPB personnel are still using the old daily disaster event reporting system. Now that the historical data is nearly complete for 1997-2009, BNPB's daily disaster event reports will soon be integrated into DIBI.

The SCDRR programme has ambitiously targeted four provinces (chosen from the SCDRR focus of seven provinces) to have established provincial BPBD's and be equipped with the capacity to launch their DIBI-style disaster information management systems by the end of 2009. In 2008, on the basis of preliminary analysis of 10 years of national data contained in the DIBI, the

BNPB with SCDRR identified three provinces that should begin compilation of locally held data starting from 1972. The chosen provinces were Yogyakarta, Central Java, and West Sumatera. The choice of provinces was based on the level of inherent capacity and ICT infrastructure, the regularity of reporting to BNPB, and the quality of validated data sets available. BNPB and SCDRR are supporting these selected provinces with the compilation of their previous thirty years of data and this represents the first step towards establishing their sub-national DIBI.

Further rollout of the Data User training is planned for academia and some media representatives - initially targeting those involved in the PLANAS PRB (National Platform for DRR)¹. Such involvement of academia and mass media organisations promotes the use of DIBI beyond the government and humanitarian domain, enhancing its reputation as a source of useful and accurate disaster information for a wider audience of users. In parallel with this expansion of DIBI users, the SCDRR is compiling a national DRR experts-roster that includes geographic, thematic and scientific areas of expertise pertinent to the mainstreaming of DRR into Indonesia's national and sub-national development planning.

For some time, GRIP has been driving the development of a methodology / software that can analyse the linkages between disaster and poverty or climate change. It has now been demonstrated that this is possible by modifying DesInventar. At the recent Global Platform for DRR July 7- 10, 2009 in Geneva, the GRIP publicly praised the work of the Indonesian delegation (BNPB, BAPPENAS, World Bank's PNPM and UNDP's SCDRR programme) in supporting the integration of DesInventar with socio-economic data, in particular, highlighting the relationship between disaster risk and poverty. The integration of the poverty and disaster data represents a world-first on a country-wide basis that allows drilling-down into sub-district level. (See Box 3, below and, <http://simpadu-pnpm.bappenas.go.id> and, <http://bappenas.go.id/node/116/1926/persiapan-mis-pnpm-mandiri/>).

⁶ See Lessons Learned: Indonesia's Partnership for Disaster Risk Reduction

Box 3: Wider Collaboration - PNPB MIS, DesInventar and DIBI Interface

Through SCDRR's support to BNPB, and UNDP's direct support to BAPPENAS, the DIBI Platform has led the way in producing a linked set of data from poverty assessments with the data in DIBI – this has been conducted in concert with the World Bank's PNPB programme that focuses on community empowerment at the sub-district and village level in Indonesia. This integration has required numerous changes to the source code of DesInventar.



State Minister for National Development Planning/
Chairman of National Development Planning Agency,
Paskah Suzetta officially launched SIMPADU PNPB
Mandiri.

UNDP has been working closely with an IT consultancy company to build an integrated database that accommodates various database formats and allows the seamless interchange of data sets between, for example the PNPB MIS, DIBI and DesInventar. These parties are now using exactly the same database structure. The DesInventar database is now part of the PNPB Data Warehouse and relationships between tables have been drawn to

ensure that every record can be drilled-down-into greater detail and be denoted by geographic and time reference.

The second PNPB MIS socialisation workshop was attended by more than 30 participants from a wider range of government agencies thus indicating government endorsement of the PNPB, DesInventar and the DIBI Interface. Samples used at workshops for the PNPB MIS displayed real field data and provided the participants with examples of the type of poverty analysis made possible by cross-referencing with DesInventar data. The PNPB and DIBI cross-generated-data makes it possible to conduct analyses such as the relationship between poverty levels and disaster events, as well as providing options to map and chart these relationships over time.

The combined PNPB MIS, DIBI, BAPPENAS team is in the process of preparing the user manual, both for public users and the management team. The site is still being tested and the team is continuously improving the site and fixing bugs.

What challenges have been faced with DIBI? How have these been overcome?

DIBI's evolution has encountered financial, technical, technological, bureaucratic and political challenges. These challenges are further elaborated below.

As noted in the introduction, in 2005, the political climate was not conducive to ready acceptance of DesInventar (the base programme for DIBI). And, it was not until the situation had changed with the introduction of the Disaster Management Law 24 /2007, that the empowered National Disaster Management Agency (BNPB) was convinced of the value of the information management system being proposed. Patience and persistence were fundamental to the eventual GOI adoption of DIBI.

The SCDRR programme targets 7 provinces at the sub-national level while supporting BNPB at the national level. While support at the national level to BAPPENAS and BNPB has been well documented and appreciated, the financial constraints placed on the disbursement of funding from the national government partner (in this case, BAPPENAS) to the sub-national provincial administrations has been problematic owing to the convoluted nature of the GoI's financial regulations. The flow of funds to the SCDRR-targeted-provinces has been slower than planned, requiring

the approval of the BAPPENAS, the Ministry of Home Affairs (MOHA) and the Ministry of Finance (MOF). This delay has meant that sub-national empowerment in terms of the DRR agenda have been stunted: risk assessments have not been done, the push for legislative reform in support of DRR has been less than was required, and data compilation and DIBI roll-out have progressed slower than planned. UNDP has been working with the GoI (MOHA, MOF, BAPPENAS) to make fiscal arrangements that fulfil the GoI's requirements and those of programme expediency.

While the intention of DIBI is to provide the historical information of disasters, it also provides the opportunity to identify trends, risks and vulnerability. However, even when disaster risks have been identified, vulnerabilities noted, and supported by the historical data, prioritisation of regions has given rise to political sensitivities. On the one hand, the DIBI, and the SCDRR programme are based on a philosophy of open access to information and transparency in actions for DRR, whilst, the reality seems that when the regions are competing for status and funding and the most useful information is sometimes deemed politically-sensitive and not publicised. While the data from the Central Bureau of Statistics provides a window into the status of each and every

administrative region in Indonesia, and is publicly available, and some rankings of administrative districts does occur, information derived through tools such as DIBI and PNPM MIS can give deep and detailed insight into the information and raise issues that are deemed unpalatable. Meetings have recently been convened between the MOHA, MOF, BAPPENAS, and the Coordinating Ministry for Peoples' Welfare to determine what information should be made publicly available through such web-based portals such as PNPM MIS and DIBI. A process should be developed to desensitise the administrations and induce a culture of 'hunger for knowledge' that supports transparency in information, whether it be 'positive' or 'negative'.

An adjunct to the transparency issue and one of the main challenges faced by the PNPM MIS is the lack of accuracy of data when extracted directly from programme sectors. Currently, these data are displayed 'as is': having not been cleaned of unrealistic figures, leading to incorrect conclusions being drawn. A concerted data cleaning effort is required.

DIBI still faces technical and technological challenges as it proceeds with sub-national roll-out, in particular in terms of sub-national capacity to implement the DIBI-style information management system. Sub-national capacity, in this context means - human resources as well as ICT infrastructure: this deficiency partly accounts for the 'rejection' noted in the interview excerpt in Box 4, below. Even at the national level, some have suggested that DIBI is complicated - not user friendly. Although a simple tutorial is now on-line, web-usage statistics, noted above, indicate that usage, and the complexity of usage of DIBI increases after the Data User Trainings are conducted and capacity has been built. BNPB/SCDRR's DIBI training sessions have yet to implement evaluation tools to assess the efficacy of the training conducted: a simple pre-training survey of DIBI knowledge followed a by a post-training survey (or on-line test) could be developed to fill this gap. The solution to this dilemma has been partly addressed through the development of the Bengkulu model for roll-out (See Box 1, above).

Box 4: Edited excerpt from 'Government Promises better disaster management', Jakarta Post, Tuesday 22 April, 2008. BNPB Head, Syamsul Ma'arif (SM) interviewed by Andra Wisnu (AW).

AW: What about the availability of human resources? Do you have specially-trained people to help handle disasters?

SM: Yes. In our agency, we have members of the former BAKORNAS PB team. A lot of those personnel are experts in their particular fields, including those that are involved in developing the network with universities which will build appropriate disaster-related technical capacity. We hope to expand this professional network country-wide. However, the regional governments have sometimes been unresponsive or unwilling to play host to these experts: something we are still unable to fully understand. I continue to implore the regional governments to host experts as consultants for their disaster regulations and bylaws. These experts can provide great benefit to these regions – remembering - the aim is to ensure that all development planning in the country is based on disaster risk reduction.

What lessons can be distilled from the Indonesian Disaster Data and Information Management story in Indonesia?

1. **Success introducing a powerful new information management tool is dependent on timing and marketing.**

When UNDP initially put forward DesInventar as the ideal database for Indonesia's disaster tracking, a receptive audience was not to be found. At that time BAKORNAS PB was in a state of flux, awaiting the legal reform process for Disaster Management in Indonesia. Moreover, BAKORNAS PB already had its own database. The manner in which DesInventar was introduced – as just another database – did not 'sell' the software. It was only when the DM Law 24/2007 was introduced, and the BNPB was anointed as the agency for national disaster management at all stages of the disaster management cycle, that a willing 'buyer' was found. In the meantime, UNDP's reflection on its previous marketing of DesInventar concluded that it was poorly packaged. In the interim, the SCDRR programme was finalised and incorporated support to the BNPB and the sub-national targeted provinces for Disaster Information Management and Tracking which ultimately led to the successful transfer of the DesInventar: to be known as the BNPB's Disaster Data and Information Management Database (DIBI).

2. **Capacity needs to be assessed before it can be built.**

While at the national level, DIBI was adopted by a significant number of willing government departments and the wider DM community, the infrastructure, human capital, technical expertise and technological knowledge were notably lacking in many of the sub-national administrations. It would have been prudent to assess sub-national capacity in the targeted provinces prior to attempting roll-out of the DIBI-style information management system at the sub-national level. Sub-national capacity assessment prior to roll-out would enable better targeting of training requirements as well as better targeting of financial resources for hardware, software and human resource expenditures.

3. **Evaluation of the training provided is essential for several reasons, namely, to ensure effectiveness, repeatability, and continuous improvement of the training methodology. Training in DIBI has been conducted but an evaluation system has yet to be implemented.**

The Bengkulu Model for sub-national roll-out (Box 1, above), does not include any participant satisfaction assessment of the socialisation workshops, FGD's, or Training Modules. The SCDRR has

thus far relied on internal monitoring practices rather than applied monitoring for the field activities. Some suggested methods are: simple evaluation questionnaires for participants or pre-training and end-of-session tests. More comprehensive satisfaction and utilisation of skills learned could be monitored by issuing each participant with a unique User Name & Password for accessing DIBI. Such user identification could be encouraged by providing them with 'added-benefits' within the website. The user identification would henceforth enable the effective monitoring of the training participants usage of DIBI and their more complex usage of DIBI post-training and over longer periods of time.

- 4. Participants in training for systems such as DIBI require time for reflection and digestion between training sessions.** While haste is understandable, sometimes it renders the training overwhelming for participants: especially those unfamiliar with ICT or without access to ICT infrastructure. Users of DIBI need to have time to use the software and become comfortable manipulating the query formats etc. before developing the skills to structure more complex analyses. (Refer to Lesson 2, above.)

- 5. Collaboration drives innovation.** The UNDP SCDRR team's participation in the development and interlinking of PNPM MIS and DIBI has exponentially increased the level and types of analyses that are possible with the now compatible dat

Additional information:

<http://www.DesInventar.net>

<http://www.sc-drr.org>

<http://dibi.bnppb.go.id>

The PNPB MIS based on DesInventar is now online - public users can only see a dashboard, query page, view data, and view map. Data from <http://dibi.bnppb.go.id> is now accessible and importable into <http://simpadu-pnpm.bappenas.go.id>, however, access is restricted to registered users.

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Useful resources and tools:

United Nations International Strategy for Disaster Reduction (UNISDR) www.unisdr.org
The ISDR aims at building disaster resilient communities by promoting increased awareness of the importance of disaster reduction as an integral component of sustainable development, with the goal of reducing human, social, economic and environmental losses due to natural hazards and related technological and environmental disasters.

Global Risk Identification Programme (GRIP) www.gripweb.org
GRIP is a multi-stakeholder initiative that directly aligns with the Hyogo Framework for Action (HFA)'s Priority Area 2: risk identification, assessment and monitoring. Although hosted by the United Nations Development Programme, GRIP's structure, is inherently multi-stakeholder, as it is a set of harmonised activities contributing to commonly-agreed-upon objectives.

Emergency Events Database (EMDAT) www.emdat.org
The main objective of this international database is to serve the purposes of humanitarian action at national and international levels. It is an initiative aimed to rationalise decision-making for disaster preparedness, as well as providing an objective base for vulnerability assessment and priority setting.



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