

Development of DRR Action Plans for local government in Indonesia

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Introduction

Indonesia is amongst the countries with the highest disaster risk globally (Djalante et al., 2017). It has a very high exposure to a range of natural and climatic hazards as well as considerable social vulnerabilities (UNU-EHS and ADW 2014). Indonesia has undergone major reforms in disaster risk management, both in response to the 2004 Indian Ocean earthquake and tsunami (Anantasari et al., 2017) and the Hyogo Framework for Action (Mardiah et al., 2017). The government introduced new disaster management legislation (Law 24/2007) which made local government (provincial and city/district/sub-district) responsible for disaster risk reduction (DRR) and its integration into regional development programmes as well as requiring local government to allocate sufficient funding to do so (Article 8, Law 24/2007). The government has developed a National Action Plan for DRR and a National Disaster Management Plan. All provinces have since established a Regional Disaster Management Agency (BPBD) as legally required (Part Two, Law 24/2007) and over 80% of districts/cities have also established local BPBDs (Anantasari, 2017).

There is still some way to go. A recent need-gap analysis of current DRR regulations and institutional arrangements by Mardiah et al. (2017) highlighted a need for a shift in focus to mainstreaming DRR into development policies and programs, recognizing that local agencies for disaster management and development planning are at the frontline when it comes to internalizing the DRR agenda into development policy. Others (Triutomo 2013; Djalante et al., 2012; BNPB 2014) identified that the local governments capacity and capability to implement DRR measures was weak. They called for increased effort to strengthen the capacity of key local institutions.

With funding support from the New Zealand Aid programme, Gadjah Mada University (UGM) has partnered with GNS Science (a New Zealand Crown Research Institute) in a 5-year programme (2014-2019), called Strengthening Indonesian Resilience: Reducing Risks to Disasters (StIRRRD). This programme is supporting the Indonesian Government in its efforts to strengthen the DRR capacity of local government (Fathani et al., 2017), thereby addressing in part the identified gap (Figure 1) in mainstreaming DRR in Indonesia.

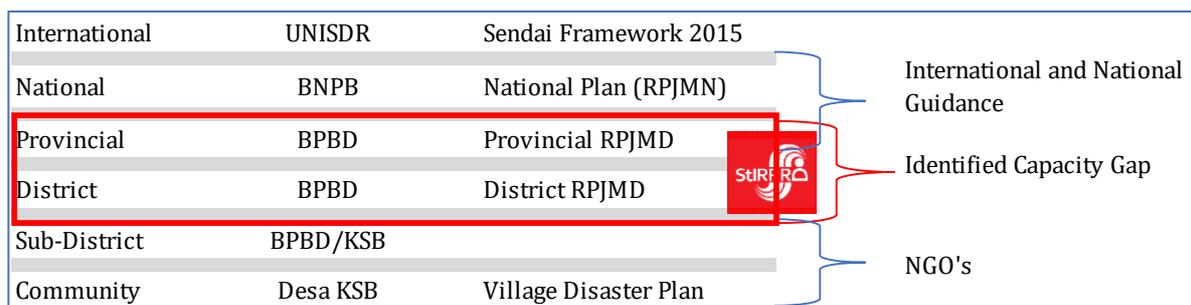


Figure 1: Context of the StIRRRD activity within International frameworks to local implementation

The StIRRRD activity was designed in 2013-2014 based on a pilot project completed in 2012 with Activity goal and outcomes given in Table 1.

Table 1: The StIRRRD Activity goal and outcomes

Goal	Reduced losses from disasters.
Long Term Outcome	Disaster resilience strengthened, and risks reduced.
Medium Term Outcomes	<ul style="list-style-type: none"> • DRR strengthening model applied to other districts • Strengthened DRR planning and implementation by local government • Improved community DRR practice
Short Term Outcomes	<ul style="list-style-type: none"> • Increased stakeholder awareness and buy-in of DRR approach • Local Government staff have skills and knowledge to support DRR • DRR Action Plan finalised • Expert knowledge and skills applied to support DRR • Improved community awareness of hazards and risks

The Activity uses several support mechanisms to enhance capacity, one of which is the development of DRR Action Plans for district level local government. These plans have been developed in 8 districts across 4 different provinces in Indonesia (Figure 2) and attempt to help focus and stimulate DRR efforts in the districts involved. The plan development process (Figures 3 and 4) and resulting plans are contributing to a methodology that can be

applied elsewhere in Indonesia by the National Disaster Management Agency (BNPB). Plan content analysis as well as plan implementation successes and failures, are being captured to assist in understanding how to better improve the planning process, methodology and DRR outcomes.

The Activity was designed prior to the adoption of the Sendai Framework (2015) and the UNISDR Words into Action Guidelines on implementing local disaster risk reduction and resilience strategies (UNISDR 2018) but contains many of the recommended components of both. In particular, the Activity was designed to promote cooperation between academic, scientific and research entities and networks and the private sector to help to reduce disaster risk (Sendai Framework, 2015).



Figure 2: Map of Indonesia showing the eight districts involved in the StIRRRD programme, in 4 provinces.

The cities (Kota) of Padang and Palu were involved in an earlier pilot.

The StIRRRD programme is moving into its last year and a period of evaluation and reflection. While still early days in terms of lessons learned, this paper shares some findings to date from the development and implementation of non-statutory DRR Action Plans.

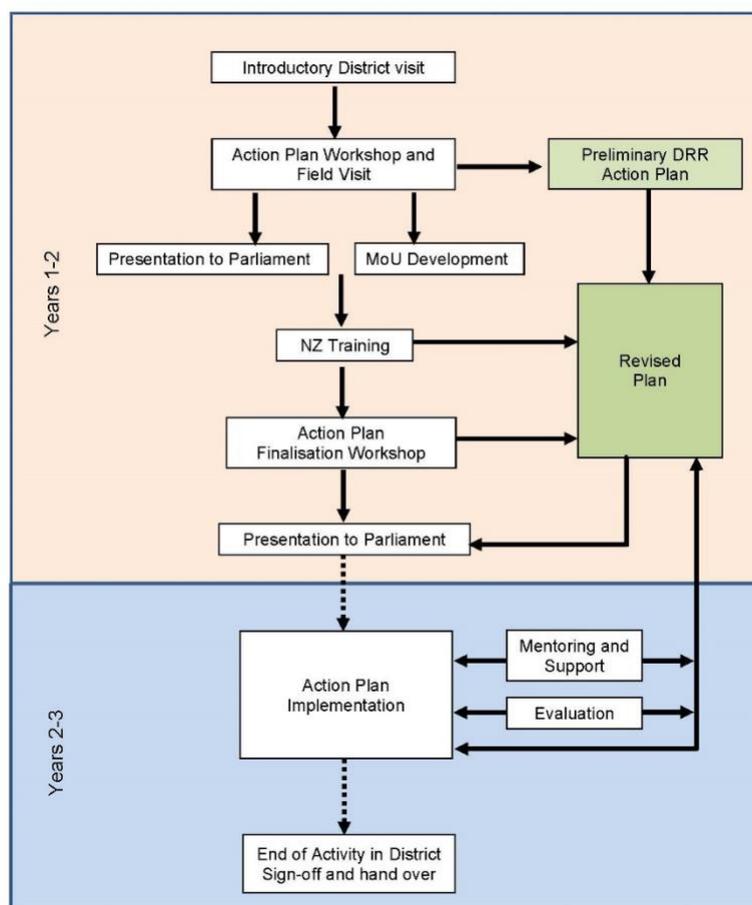


Figure 3: Summary of the StIRRRD approach.

ACTION PLAN DEVELOPMENT PROCESS

The districts participating in the StIRRRD program developed a Disaster Risk Reduction (DRR) Action Plan (AP). The process brought together representatives from government agencies, universities, and the private sector, and gave them the opportunity to help create a framework for DRR activities. As a result, the range of activities outlined within the different district APs are broad and include:

- requirement for better construction techniques,
- improving the robustness of infrastructure,
- improving education and awareness,
- establishing effective warning systems,
- increased focus on vulnerable groups,
- increasing natural resource management efforts, and
- establishing land use appropriate to the level of risk.

The plans record DRR initiatives formulated together by local government agencies including responsibility for implementation, timing and budget. Once established, the AP also forms a focus point for subsequent training and for the establishment of District DRR Forums. The Action Plan development process used by StIRRRD is summarised in Figure 4 and in the following sections. The process has three main phases, with several review steps, and a Study Visit (in this case to New Zealand), which exposes the plan developers to DRR initiatives implemented elsewhere.

Action Plan Development Process

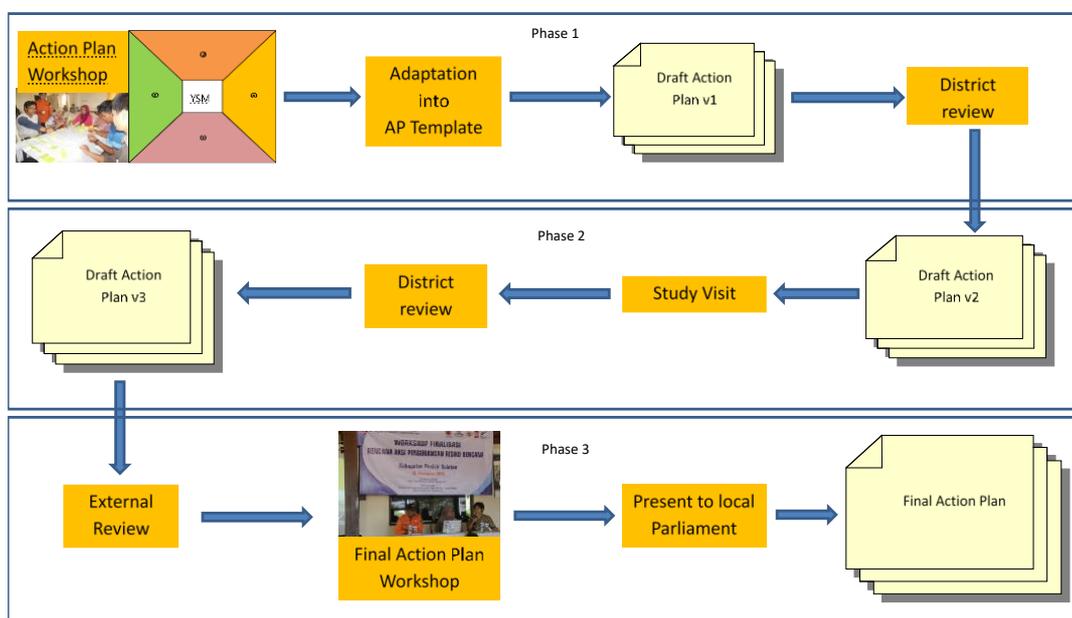


Figure 4: Action Plan development process diagram.

Phase 1: Workshop Initial Action Plan

An initial draft of the Action Plan is developed in a 2-day Workshop. It is important to have visible political support, to confirm commitment to and support of DRR initiatives, and state the need for agencies to coordinate DRR activities. This cannot be over-emphasised or underestimated, as the Emergency Management Agency (BPBD) has low status in the local government hierarchy, and political lobbying and backing is essential to get other agencies to participate. Representatives from several district government agencies, and sub-district offices participated in the workshops. The StIRRRD approach has been to also include local university experts, NGO's,

and other technical experts in hazard, risk and social sciences. While representatives from the private sector were invited to participate, it has been difficult in general to get the private sector to engage in the Activity or in DRR activities. There seems to be poorly developed relationships and some mistrust between local government and the private sector. The role of the private sector is perceived by some local government agencies as limited to providing sponsorship for equipment and materials (e.g. printing costs for preparedness posters; purchase of emergency supplies) rather than being a sector that has a direct contribution to make in building resilience through for example strengthening local businesses and supply chains, supporting staff and their livelihoods, business continuity, and being active contributors and supporters of their local communities.

The first part of the workshop provides contextual information for participants, which helps to inform later discussions in developing AP activities. The current understanding of the natural hazards that impact the area are summarized by the local Agency for Disaster Management (BPBD). It is important also to have authoritative information available on relevant hazard, risk and reduction initiatives including topics such as managing risks from various natural hazard events (earthquake, flood, landslide and tsunami hazard etc.); resilient buildings and infrastructure; creating hazard maps and use of GIS; social, cultural and environmental aspects of DRR; and warning systems.

Often, the latest event, or those events that caused significant and memorable impacts are forefront, even though such events may not pose the most significant risk. A Comparative Semi-Quantitative Risk Assessment using the Seriousness, Manageability and Growth (SMG) developed in New Zealand (MCDEM 2009; Daly, 2016) provides a relative semi-quantitative risk analysis. The hazard and risk ranking exercise aids understanding of the impacts of the hazards in terms of deaths and injuries, damage to infrastructure, economy and the environment (Seriousness), the ability of local government agencies to manage the hazard (Manageability), and likely changes in community exposure to the hazard (Growth). It gives all the participants opportunity to work in groups, have discussion and allows a consensus to be formed about hazard and risk priorities.

The importance of local wisdom cannot be underestimated, and a focused discussion can bring this knowledge, and other cultural issues, to the fore. A field trip helps to contextualise some of the local hazard issues, and to see examples of work already undertaken to reduce impacts.

The StIRRRD programme developed a DRR- Local Government- Self Assessment Tool (DRR-LG-SAT) survey tool (Anatasari et al., 2017), to assess DRR understanding and strengths and weaknesses of the District's existing risk reduction activities (as distinct from preparedness, response and recovery). The tool was based on a national tool

developed by UNDP and in use at the time by BNPB. The radar diagram below (Figure 5) shows the performance score for each category of DRR for the Sumbawa district, extracted from analysis of the survey. Plotting the results in this way can illustrate those areas requiring the most improvement and are therefore a potential priority for the AP. The results are presented as part of Phase 2 of the Action Plan Development and provide an opportunity to discuss factors contributing to the score.

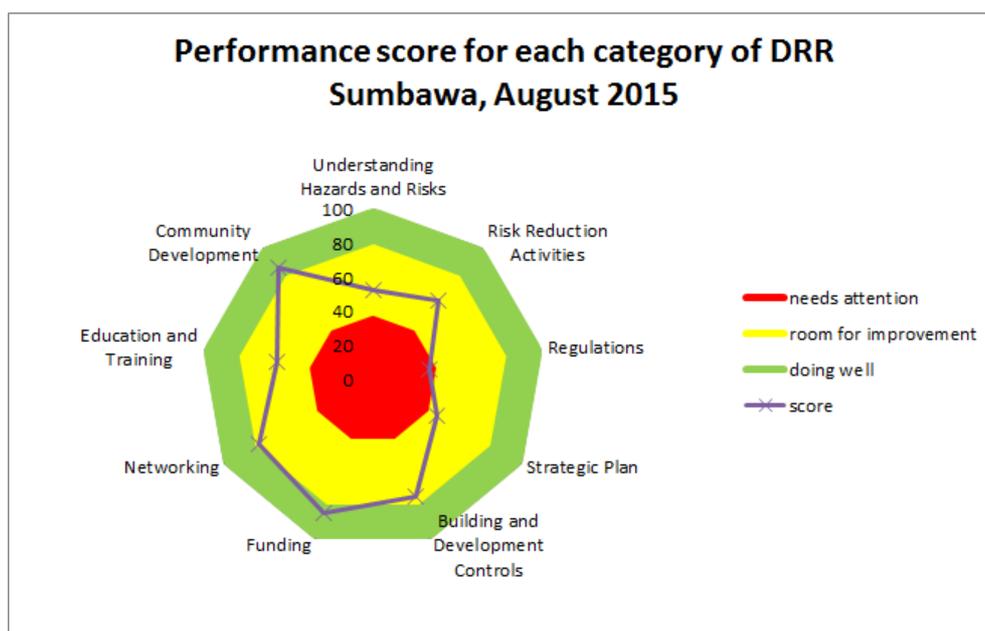


Figure 5: The Local Government Self-Assessment Survey Tool applied to Sumbawa. The Tool calculates a performance score for each category or indicator for DRR (Anantasari et al., 2017)

The last part of the workshop involves taking the knowledge disseminated in the first part of the workshop and utilizing the Yonmenkaigi System Method (UGM, 2013) tool to facilitate idea generation for a multi-stakeholder, collaborative Action Plan. Participants are split into groups to undertake this process, with each group developing actions to reduce the risks associated with a significant local hazard as defined by the SMG exercise or through discussion.

The YSM method is structured around 4 aspects of DRR; human resources, organisations & relationships, activities (or programs), and finances (Figure 6). DRR plans and ideas written on “post-it notes” are placed on a chart depicting activities that can be achieved in agreed timeframes (Figure 7). For example, under human resources the 6-month plan may be to recruit volunteers and 1-year plan is to train those volunteers. Once the

YSM chart is populated, the stakeholders debate to refine the plans - the activities can be moved around to change priorities, or two similar activities might be combined. This chart is then written up into an Action Plan.

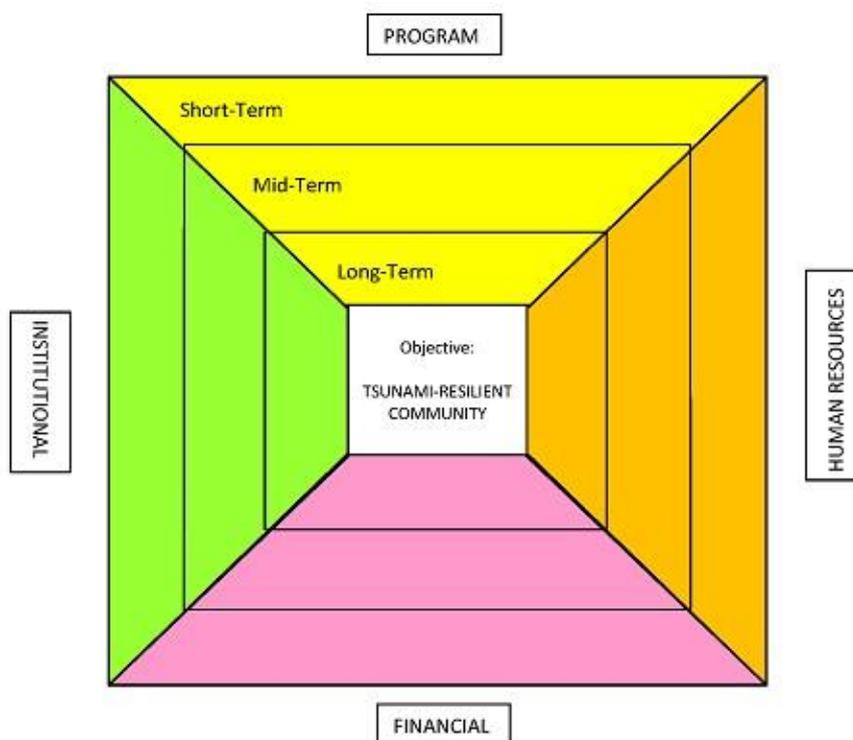


Figure 6: The Yonmenkaigi (YSM) facilitation technique was used to help generate ideas for the Action Plans (UGM, 2013).



Figure 7. Participants work through the YSM method in a workshop in Bengkulu.

(photo credit: Phil Glassey).

Phase 2: Study visit and refinement of the Action Plan

A comparative study visit, either to a neighbouring district or another province or country, to observe and share DRR initiatives that are being implemented, is one process utilised by the StIRRRD approach to refine the Action Plan. In this case, district representatives travelled to New Zealand, for a series of workshops, presentations and field visits (<https://stirrrd.org/2015/06/22/stirrrd-new-zealand-comparative-study-programme-5-19th-june-2015/>). An opportunity to revise the plan, based on observations during the visit, is facilitated. Importantly, the results of the DRR-LG-SAT survey are presented that highlight the strengths and weaknesses of the current DRR environment and provide a further guide to actions to be included in the plan.

Phase 3: Finalising The Action Plan

Finalising the Action Plan involves an external review of the plan, which is presented at a workshop. The Plan is debated and revised as appropriate. Most-importantly it is then presented to the local parliament for their information and support.

The Action Plan is an aspirational document (Figure 8), with individual actions requiring funding in work programmes and/or included in mid- and long-term district development plans. Agencies responsible for implementing actions or assisting with implementation of actions are identified and costs assigned, although budget for all actions may not be available and hence lower priority actions would need to be set aside.

 PENGUATAN KETAHANAN INDONESIA MELALUI PENGURANGAN RISIKO BENCANA <i>Strengthened Indonesian Resilience: Reducing Risk from Disasters (StIRRD)</i>		Version: 23 November 2015								
DISASTER RISK REDUCTION ACTION PLAN BENGKULU MUNICIPALITY Calendar Year: January 2016 - December 2019										
Name of Municipality/District	Bengkulu Municipality									
Province	Bengkulu									
Output Target	Disaster Resilient Community in Bengkulu Municipality									
Focal Point	BPBD (Regional Disaster Management Agency) Bengkulu Municipality, UNIB, DRR Forum, Bengkulu Municipality DPRD (Regional Legislative Council)									
1 ORGANIZATION										
NO.	OBJECTIVE	ACTION/ACTIVITY	INDICATOR	TIME FRAME				PERSON IN CHARGE	BUDGET (Rp)	PRIORITY
				2016	2017	2018	2019			
1.1	Improving legal basis for DRR activities	a. Drafting DRR regional regulation documents	There are DRR documents for drafting regional regulations (including Academic Draft)	x				Leader: Bengkulu BPBD (Regional Disaster Management Agency) Support: BAPPEDA (Provincial Development Planning Agency), DPRD (Regional Legislative Council), Regional secretary, Legal bureau, Higher education	250,000,000	
		b. Drafting mayor's regulations and supporting DRR regulations	Mayor's DRR regulations are drafted as implementation of DRR regional regulations	x				Leader: Bengkulu BPBD Support: BAPPEDA, DPRD, Regional secretary, Legal bureau, Higher education	200,000,000	
		c. Socializing regional regulations and mayor's regulations on DRR	<ul style="list-style-type: none"> All disaster-prone sub-districts receive socialization All stakeholders (SKPD, NGOs, Private sector) receive socialization 		x	x		Leader: Bengkulu BPBD Support: BAPPEDA, DPRD, SKPD (Local government task forces), NGOs, sub-district	100,000,000	

Figure 8: Example of part of an Action Plan developed by Bengkulu City

PLAN EVALUATION

The participatory approach used to develop the DRR Action Plans resulted in multi-stakeholder standalone plans, which have influenced the content of regulations and legislation and increased budget allocations for disaster risk reduction and preparedness activities in some districts. A preliminary assessment of the content and impacts of the Action Plans is presented below.

Content analysis

A content analysis of the Action Plans from each of the 8 districts was undertaken approximately mid-way through the programme. The reason for completing this analysis was to broadly understand the types of risk reduction activities and focus of effort determined by each district, and whether a comprehensive approach had been taken which considered the full range of risk reduction activities available to, and appropriate for that

district. It was not a full needs gap analysis. The analysis instead was used to gain a preliminary understanding of the areas of focus to assist with the development of further training and coaching strategies.

A checklist comprising 34 questions was developed to inform the analysis. These questions were grouped into 9 themes (Figure 9), which corresponded with those used elsewhere to develop the DRR-LG-SAT (Anantasari et al., 2017). The number of questions within each theme varied: 2 was the minimum, and 8 was the maximum. The full set of 34 questions is listed elsewhere (Anantasari et al., 2017), and an example is provided in Table 2 to illustrate the form of the investigation.

Table 2: Example of questions asked relating to one of the 9 themes; in this case Risk Reduction Activities.

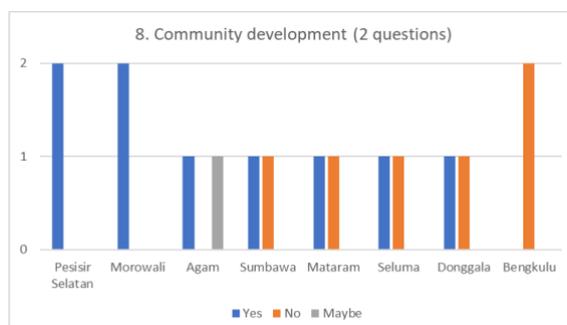
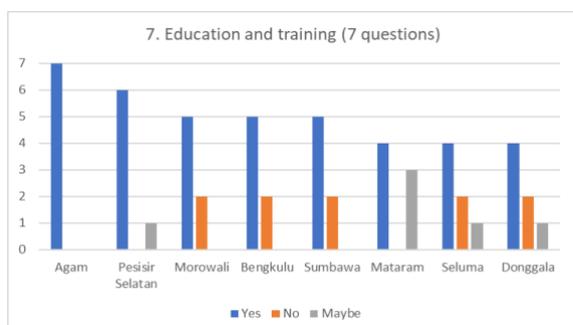
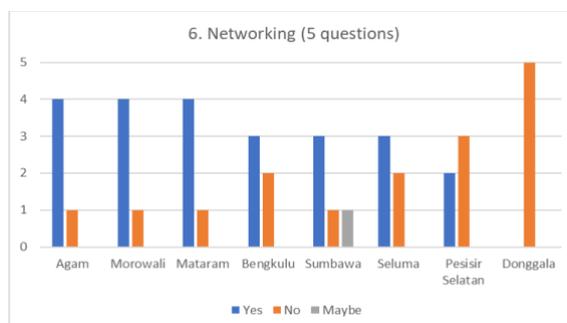
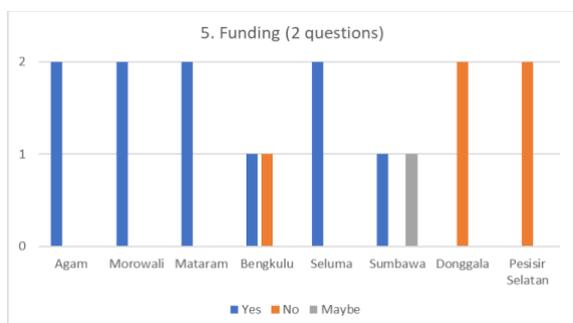
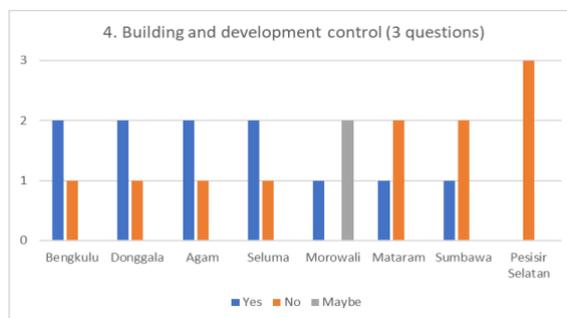
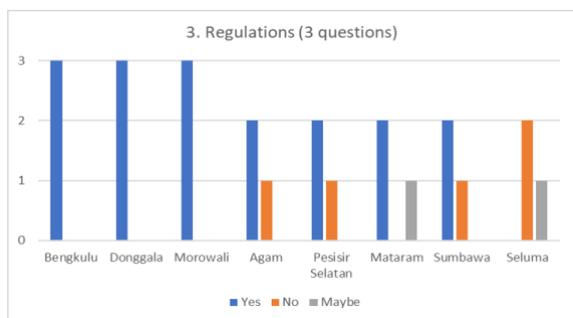
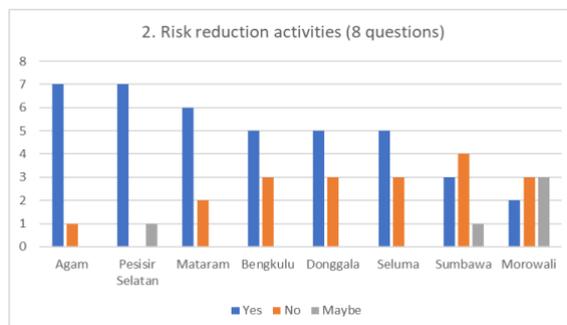
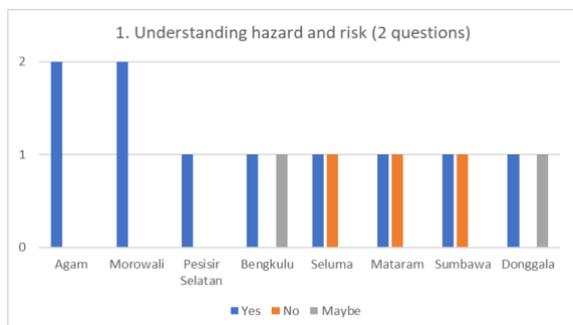
Theme 2. Risk reduction activities	2.1 Are there actions that relate to identifying, or reducing risk for (i) Women, (ii) Disabled or (iii) Other vulnerable groups?
	2.2 Are there actions that relate to environmental management options which will help to reduce risk? <i>E.g. waste management</i>

Each Action Plan was assessed to determine whether it included activities that aligned with each question. The results are graphed in Figure 9. The graphs show the number of positive ('yes') and negative ('no') responses to the questions within each theme. In some cases, it was not clear whether an Action Plan included an activity that aligns with a question, and this was coded 'maybe'.

The analysis revealed that all Action Plans included a comprehensive list of activities under *Education and Training*, which suggested that engaging participants at a community level was a strong focus for all 8 districts. Most Action Plans included a broad range of activities relating to *Risk Reduction Activities*, *Developing DRR Regulations*, *Building Strong DRR Networks*, and *Understanding Hazards and Risk*. A smaller number of Action Plans included activities related to the *Planning* theme, which had a focus on determining whether there was a clear timeframe for implementing DRR activities, and whether actions had been assigned to a range of agencies.

The analysis noted which districts had not included activities within a particular theme, which could simply be an indication that there was no perceived gap in this theme and consequently few, if any actions required. Hence the analysis needed to be done with specific knowledge about each district, to determine whether gaps were intentional or whether they reflected a lack of appreciation about the importance of that theme in reducing risk.

The content analysis did not assess the extent of progress each district was making toward implementing the activities identified in their Action Plan, nor did it evaluate the quality of any activities being undertaken. The analysis was used to modify the Activity and inform the development of district-specific coaching and mentoring strategies, identifying where further training and support was required.



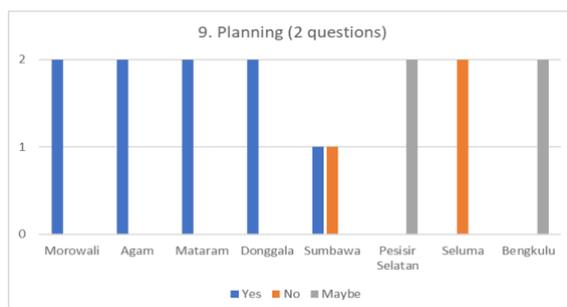


Figure 9. Graphs illustrating whether the district Action Plans include planned activities that relate to a series of 34 questions, grouped within 9 different DRR themes.

Budget increases

As noted above, the DRR Action Plans identify the key elements which contribute to the overall objective of reducing disaster risk. The Action Plan (comprising a range of different activities) must first gain support at the political level and be integrated into work programmes before it can be implemented. Along with that support, it is essential that an appropriate budget is allocated to agencies within the district, so they can employ staff, purchase resources, and implement the activities outlined in the Action Plan.

Prior to the project commencing in 2014, BPBD agencies were less likely to track the proportion of their budget allocated specifically to DRR activities. The process of formulating the Action Plans enabled BPBD staff to request specific, or additional budget for the DRR activities identified in their plans. This in turn enabled improved tracking of baseline DRR budget spend.

An analysis of budget increases has been undertaken, using the data shown in Table 3 which could be used as one measure of the impact that the development of DRR Action Plans has had on raising the capacity of local government, and stimulating DRR efforts.

On average, the total BPBD budget for the 8 districts increased from 5,400 million rupiah in 2014, to 10,700 million rupiah in 2016, with a particularly sharp increase between 2015 and 2016 (Figure 10). The average budget for DRR activities increased from 483 million rupiah to 5,328 million rupiah over the same period.

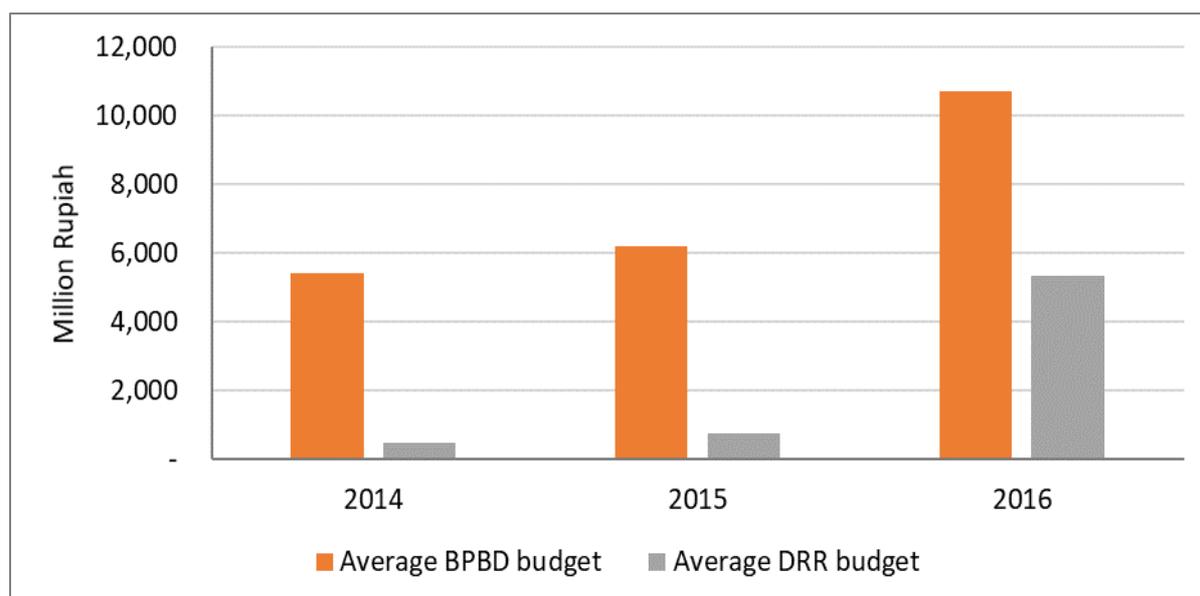


Figure 10. Average budget for the 8 BPBD agencies (orange bars), and average budget for DRR-specific activities (grey bars) from 2014 to 2016.

Table 3. The budget for DRR activities, and the total budget for the BPBD agencies, from 2014 to 2016 (in millions of rupiah). The percent increase over this period for both parameters is also shown. Where no data is available the cell is marked with a dash (-). An exceptionally large increase in the DRR budget in Morowali in 2016 was a one-off in response to major disaster event (marked with an *).

Year		Agam	Bengkulu	Donggala	Mataram	Morowali	Pesisir Selatan	Seluma	Sumbawa
2014	DRR	-	82	57	279	79	1,200	1,226	296
	Total	2,933	1,067	2,585	3,442	16,508	7,623	3,226	6,070
2015	DRR	-	420	53	145	406	2,943	1,247	191
	Total	3,950	2,421	6,945	3,155	9,194	11,071	7,473	5,533
2016	DRR	-	593	226	306	34,333	1,246	955	215
	Total	10,285	3,289	9,835	4,655	38,380	8,202	4,498	6,665
Increase (2014-2016)	DRR	-	+623%	+296%	+10%	*	+4%	-22%	-27%
	Total	+251%	+208%	+280%	+35%	232%	+8%	+39%	+10%

Although there is an overall trend of budget increases, it is noted that there can be considerable variation from year to year, and from district to district. There are several factors which can influence the BPBD budget; these include the overall budget available for local government activities across the district; political awareness and pressure; and a need to respond to major hazard events when they occur. For example, the large BPBD budget for Morowali in 2016 was in response to a major flood event which caused significant damage in the preceding year. There is also no minimum budget allocation for DRR as there is for other areas such as education (a minimum of 10% of local government budget is required to be spent on education). The budget for DRR-specific activities in 7 of the 8 districts is shown in Figure 11, from 2014 up until 2018 (where data is available).

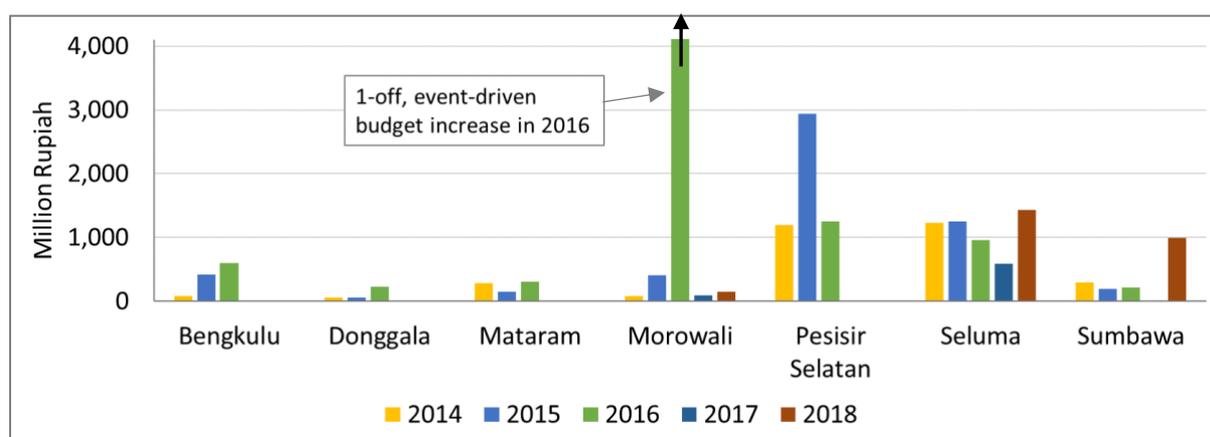


Figure 11. The annual budget for DRR activities in each district, since tracking of this parameter commenced in 2014.

While it is encouraging to see the districts attempt to record spend on DRR related activities and recognising the value of attempting to quantify DRR spend as distinct from a total spend on disaster management (including contingency funds for disaster response), we do not have confidence in the comparability of the results as accounting mechanisms are not consistent between districts. In addition, the budget amounts are self-reported, and sometimes include large budget injections for infrastructure or other capital expenditure, and budgets vary greatly based on election cycles and national priorities. It is not entirely clear whether DRR activities within other agencies are included in the figures and what is being attributed as DRR spending. The Red Cross note in their assessment of DRR law in Indonesia (IFRC, 2016) that funding flows and procedures for budget lines for DRR need improving.

It would appear that DRR budget is primarily spent on subdistrict and village or school education programmes, often implemented by NGO's and on implementing physical warning systems for flood hazard. For example, in Seluma district funding has been prioritised for a 24/7 manned telemetered river flow monitoring unit and this is planned to be extended to 10 flood-prone (and tsunami prone) locations. They have also embarked on a programme of community engagement along the Tsunami-prone coast, and a "Safer Schools" project. In Pesisir Selatan, budget has been prioritised to establishing and strengthening Nagaris (village) disaster preparedness groups (KSB) in association with a German NGO Arbeiter Samaritan Bund. This also includes developing flood early warning systems in these Nagaris.

Regulations and development planning

As at December 2017, six of the eight StIRRRD districts have developed new (or substantially updated) disaster risk management regulations. Most of these were developed in tandem, or immediately after the Action Plan development process and were reportedly influenced by the process. Donggala has reported a substantial revision of its building regulations as a result of participation in the programme. In Pesisir Selatan a Bupati (mayoral) regulation is being proposed that states every village should allocate 20 Million Rupiah for DRR Activities each year from the Village fund (dana desa). In Agam the Bupati has appealed for Nagaris to allocate Village funds for DRR activities but this has not been regulated.

No analysis of the new regulations in place has yet been undertaken. This, together with a review of the regional medium-term development plans (RPJMD) will be a focus of the remaining 12 months of the programme.

The Activity is guided by a Governance Group (AGG), and policy recommendations have been made to that group based on observations of the StIRRRD team. A recommendation regarding limiting rotation of BPBD staff was put to the Ministry of Home Affairs (MoHA) from the AGG, which is being considered. Staff rotation is common and inhibits continuity of DRR programmes over longer periods. Other recommendations have been made regarding professional development and accreditation programme for BPBD staff in part to raise the status of BPBD roles. Kemendesa (Ministry of Village, Development of Disadvantaged Regions and Transmigration) has developed a professional development training DRR programme for its staff. The coordination of DRR activities across local government agencies is variable and it was recommended to BNPB that national guidance for the scope, composition and role of local DRR forums be formulated.

PLAN IMPLEMENTATION

Regular progress updates are obtained from the districts mainly to identify where further support and training might be required to help overcome barriers. In some cases, Action Plans have dovetailed into various district agency work programmes (e.g. planning; forestry; public works), in others, the BPBD has retained overall responsibility for ensuring the Action Plan is implemented by coordinating effort across the various agencies involved.

A follow-up visit to each district in March 2017 (Daly et al., 2017; Glassey et al., 2018), showed that each district was at a different stage on its journey towards reducing risk from hazards. Significant and rapid progress is being

made in some districts, while others are not yet making significant headway. The factors which seem to be making progress on DRR initiatives more successful include:

- Good Bupati (Head of District/Mayor) support and leadership, with DRR seen as a priority,
- Good Head of Parliament support (setting budgets and regulations),
- Strong BPBD leadership,
- Stable BPBD tenure, with limited staff rotation,
- BPBD is at the same level (in the local government structure) as other government departments,
- Good coordination across government departments, with integrated programmes and budgets (achieved through a DRR Forum or coordinating committee),
- Bappeda has a high degree of involvement in order to integrate DRR Actions into regional medium-term development plans (RPJMD).

Progress reports, plan content analysis and visits, have been useful to assist in the development of tailored coaching and mentoring strategies for each district. The key 'themes' (or elements) which the strategies have been built around are listed below, along with some examples of specific actions:

1. Leadership
 - Working more closely with the Bupati and parliament to raise awareness of DRR.
 - Advocating for strong leaders to be placed in key positions (e.g. Head of BPBD).
 - Assistance to progress regulations and district decrees (required before regulations can be developed).

2. Coordination
 - Encourage collaboration and information sharing between StIRRRD districts.
 - Encourage the establishment (or better use) of DRR forums and other coordinating mechanisms.
 - Encourage improved reporting by all government departments on the implementation of action plan activities.

3. Capacity

- Engage 2nd tier staff (BPBD department heads) to participate in discussions and reporting.
- Technical training extended to sub-district staff and village disaster management volunteers.
- Technical training provided to incoming BPBD staff after a rotation has occurred.

SUMMARY AND CONCLUSIONS

The participatory approach used to develop the Disaster Risk Reduction plans has resulted in non-statutory multi-stakeholder standalone plans which have influenced the content of regulations and legislation and may have led to increased budget allocations for disaster risk reduction and preparedness activities. They will also need to influence regional medium-term development plans in order to affect a long-term approach to reducing risk. The process used to develop the plans has led to strengthened relationships across local government and between local government and local universities. Disaster risk management staff have increased their capability and confidence and gained experience in presenting work programmes to parliament and holding coordinating meetings across government departments. The sustained training and coaching effort over 4 years has provided staff with a professional development opportunity which in many cases has resulted in promotion to other roles within local government. While an impediment to continuity in the short term, DRR knowledge is effectively transferred across local government. The training and coaching supporting plan development has resulted in plan content encompassing actions across themes including hazard and risk assessment; policy and planning; funding; preparedness; education and training; early warning systems; environmental management; identifying and working with gender and vulnerable groups; and increased community engagement. The range of actions being implemented has substantially increased beyond traditional awareness and response activities. There remain challenges to action plan implementation, including the perception and status of disaster management as a unit of local government and therefore its ability to coordinate across other government departments. Accreditation and professional development is helping change perceptions and central government is reviewing guidance around staff rotation. Good leadership remains a key success factor for action plan implementation.

While not a replacement for a statutory approach to reducing risk in the Indonesian context, non-statutory plans have their place and can stimulate discussion and activity as a precursor to introducing mid-term development plans.

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ACKNOWLEDGEMENTS

The authors would like to acknowledge the contribution made to the development of the Action Plans by partner universities UNTAD (Tadulako University), UNRAM (Mataram University), UNIB (Bengkulu University) and UNAND (Andalas University). We would also like to acknowledge the effort and enthusiasm shown by the many disaster risk management professionals working in Indonesia to reduce risk in their local communities.