Chapter 12
Disability-Inclusive DRR: Information, Risk and Practical-Action

Alex Robinson and Sae Kani

Abstract The chapter argues that although risk and vulnerability are central to the disaster risk reduction (DRR) community's collective endeavours, to date scant attention has been paid to the most at-risk within our work. Disability is a cross-cutting issue that significantly increases risk for individuals who are often already living with exclusion. While many DRR interventions claim to be participatory in their approach, interventions that recognise and respond to the needs of people with disability remain paradoxically few.

The chapter draws on practitioner experience of implementing DRR education projects for people with disability between 2007 and 2012 in Indonesia. The current state of play regarding disability and DRR policy is outlined and an explanation for the lack of engagement by DRR actors in the field is suggested. In response, a simple model, drawing on Richard Heeks' Information Chain (1999), is presented as a way to practically reconsider disability from a DRR perspective and to guide the planning and implementation of more inclusive DRR programming.

Keywords Disability • Disaster risk reduction • Education • Inclusion

12.1 Introduction

The idea that disaster risk reduction (DRR) efforts rarely include those most at-risk appears, at best, paradoxical. However, this is more often than not the case. People with disability make up 15–20 % of the world's population (WHO and World Bank 2011) and are at significantly higher risk than their non-disabled peers in times of

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R. Shaw and T. Izumi (eds.), *Civil Society Organization and Disaster Risk Reduction: The Asian Dilemma*, Disaster Risk Reduction: Methods, Approaches and Practices,
DOI 10.1007/978-4-431-54877-5_12, © Springer Japan 2014

disaster. This increased risk may stem from sensory impairments that limit access to potentially life-saving information prior to disaster or from mobility impairments that may hinder evacuation during a disaster. Recent figures for Miyagi prefecture following the Great East Japan earthquake show that while the general mortality rate was 0.8 %, the mortality rate for people with disability was 3.5 % (UNESCAP 2012a). Despite the increased risk that people with disability face, disability has been conspicuous in its absence from DRR policy and practice.

The Hyogo Framework for Action (HFA) provides the international template for moving from a disaster response paradigm to a DRR approach that emphasises prevention, preparedness and mitigation. Under the General Considerations of the HFA reference is made to gender, cultural diversity, age and the catch-all 'vulnerable groups' (ISDR 2005). Reference to disability within the HFA is confined to Priority for Action 4 'Reduce the underlying risk factors' (*Ibid*). Article ii, g of the HFA states the need to 'Strengthen the implementation of social safety-net mechanisms to assist the poor, the elderly and the disabled [*sic*], and other populations affected by disasters.' (*Ibid*). It is not overtly clear whether clause 'g' actually reflects the overall holistic approach to DRR that the HFA sets forth or remains more grounded in a post-disaster understanding. As such, this reference to disability seems to be somewhat of an afterthought.

The lack of clear and specific reference to the inclusion of people with disability in DRR within the HFA is viewed as a contributing factor to the dearth of disability-inclusive DRR practice and policy to date. The development studies and DRR literature also reflects this lack of prioritisation. With the adoption of the HFA there have been concerted efforts to justify the rationale for DRR actions and policy. This has largely been via cost–benefit analyses. Such analyses address vulnerability as a core concern; however, disability remains absent (Venton and Venton 2004; Vorhies 2012). The disproportionate risk that people with disability face is neither highlighted nor addressed. One explanation for this omission is that organisations concerned with DRR will tend to focus on established institutional interests and focuses (Twigg 2002). For the vast majority, this has not included people with disability. From a broader development perspective it should also be noted that the Millennium Development Goals, as the primary international mechanism for directing development policy and practice, also do not include disability (UN 2000). While not addressing disability directly John Twigg notes the need for 'inclusiveness' in DRR approaches and the importance of 'breaking down cultural resistance among specific groups of disaster professionals towards adopting approaches from other disciplines.' (*Ibid*: 7).

In terms of disciplinary focus this paper takes DRR as its primary point of reference; however, the paper is influenced by broader and evolving trends in understanding disability. A significant barrier to moving towards disability-inclusive DRR is the lack of data on the impacts of disasters on people with disability (UNESCAP 2012a). As noted, recent studies from Japan indicate that the mortality rate for people with disability is significantly higher than for the general population. As is common, comprehensive data on disability was not collected following the Padang, 2009 earthquake. However, Sudaryo et al. (2012) highlight consistently higher disability incidences among injured survivors. A further concern is that lower mortality rates can lead to higher morbidity rates. Estimates suggest that 300,000 people survived the Haiti 2010 earthquake with injuries. An estimated 2,000–4,000 people became amputees following the earthquake (Landry 2010).

Lack of consideration, and participation, of people with disability in the drafting of the HFA, and in DRR in general, is a double-edged sword. While the DRR community has yet to engage with disability, it should be noted that the disability movement has yet to engage effectively with DRR. However, precedents exist. Of paramount importance is the landmark United Nations Convention on the Rights of Persons with Disabilities and as ratified by Indonesia in 2011. Article 11 of the CRPD is concerned with ‘Situations of risk and humanitarian emergencies’ and reads as follows:

> States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters (UN 2006).

The emphasis of language within Article 11, stressing ‘humanitarian emergencies’ and the ‘occurrence of natural disasters’, may again be read as not being in line with current DRR understandings that stress the importance of acting prior to the onset of a potential emergency or disaster. Nevertheless, the UNCRPD offers a strong and universal rights-based call for more disability-inclusive DRR.

12.2 Participation, Inclusion and Risk

The concept of participation forms the staple of much DRR. The HFA stresses localisation and the involvement of citizens and communities under Priority for Action 3 (ISDR 2005). Similarly, it would appear a natural progression for many moving into the ‘new’ DRR sector to focus their energies, existing skills and resources at the community level. Community-based DRR (CBDRR), or risk management (CBDRM), initiatives are commonplace. The concept of participation, as popularised by Chambers (1997), seeks to prioritise the positioning, understandings and participation of the poor, or marginalised or excluded, within a process of development. For Chambers, this is a political process that seeks to redress imbalances of power and voice. It is also worth noting that the shift towards DRR, away from a focus on response, re-emphasises the relationship between DRR and development. DRR is after all, and particularly at the community level, about changing attitudes and practices and such changes require concerted efforts over time. As such, initiating behavioural change appears more in line with extended development actions rather than shorter-term humanitarian response. The understanding that DRR is better viewed as a cross-cutting issue within development is indicated by the recent commitment by the UN to integrate DRR into all programmes and activities (UNSPIDER 2013).

Returning to Chambers' understanding of participation, the concern is that if we accept that community-based actions are a worthy aim within DRR, and development in general, and that such actions should be participatory both in principle and practice, why are we not prioritising those at most risk? The answer to this question most probably lies somewhere between two explanations. Firstly, it has been argued that the concept of participation has, for some time, become detached from its political roots (Cooke and Kothari 2001). Participation as an approach has become, contrary to its original vision, something that 'we' in development all too simply do. Our participatory tools and methods are applied to those that we have become comfortable working with. Our understanding of participation within DRR has yet to be extended to those outside of our institutional comfort zones. This deserves reflection. The bi-directional link between poverty and disability is well-documented (Stapleton et al. 2006). Disability increases the chances of a life in poverty and being poor increases the chances of being born with, or acquiring, a disability. It is also well-documented that people with disability face lower educational attainment, fewer meaningful work opportunities and, clearly, increased social exclusion (UNESCAP 2012b). If we add the lack of security that people with disability all too-frequently face, it would seem that challenging such inequities was what participatory approaches were designed for. And yet, people with disability are rarely engaged within, or contribute to, CBDRR initiatives.

The second issue relates to individual and institutional understandings of disability. Disability has received little attention by 'mainstream' development actors in general and DRR is little different. Disability appears to be viewed as the preserve of a small group of disability focused actors; including, international and national non-governmental organisations (NGOs) and disabled people's organisations (DPOs). Disability is thus treated as something separate and distinct. The more acceptable contemporary view of disability being a rights-based issue, as captured within the CRPD, has been some time coming. With earlier charity-based models giving way to a medical approach to disability, an aura of technical minded solutions appears to have swept into the imaginings of many. It appears that disability is largely viewed as a technical issue that requires specific expertise and no inconsiderable resources to address. For those that are more rights inclined, there is still the concern that institutional capacities do not yet exist and a potential perceived risk of failure may thwart any desire to begin. This paper suggests an alternative point of departure.

12.3 Delivering School-Based DRR

In 2009, the Chair's Summary of the 2nd session of the Global Platform for DRR stated a commitment to ensure DRR was established within national education curricula by 2015 (ISDR 2009). This initiative builds on HFA Priority for Action

3 to ‘Use knowledge, innovation and education to build a culture of safety and resilience at all levels’ (ISDR 2005). The 2009 Chair’s Summary also highlighted, albeit with somewhat narrow specification, ‘Reduced risk for all’ and noted the importance of community-based initiatives and the contribution of children to DRR. The latter is notable as children were not simply described as belonging to a particular ‘vulnerable group’, but rather highlighted as key DRR actors and contributors. This change of emphasis, as further reflected in the shift from vulnerability to resilience in the Chair’s Summary of the 4th session of the Global Platform, suggests promise for those concerned with increasing the active participation of people with disability within DRR (ISDR 2013).

Following the 2006 Yogyakarta and Central Java earthquake, the authors and Arbeiter-Samariter-Bund Deutschland e.V. (ASB), in partnership with the Indonesian Ministry of Home Affairs, were also considering the way in which DRR information could be delivered through the education system. This interest was set against a backdrop in which the idea of school-based DRR was gaining ground as was the concern to integrate DRR into the school curriculum. With regard to the latter, two significant, and seemingly separate, initiatives were underway at the national level by early 2008. Initial enquiries at the local level, however, highlighted a number of concerns. Firstly, the administrative complexity of synchronising curricula at the national and sub-national levels since the granting of autonomy to the district level in Indonesia in 2001 and the resources that such an approach would ultimately require. Secondly, the general unpopularity of the idea with local administrators and teachers who foresaw changes to the curriculum as translating into increased workloads on top of what were considered already low salaries.

There is arguably value in integrating DRR into school curricula in terms of establishing a basis for institutional sustainability as emphasised, in general terms, under HFA Priority for Action 1. There is also potential for instilling interest in a future generation of DRR related professionals. However, there appeared room to justifiably question the received wisdom of treating DRR as an academic subject for the majority in schools. The alternative was the delivery of practical DRR procedures to all students in school with a focus on practical-action rather than the academic leanings that curriculum integration suggests. It was also clear that existing school-based DRR initiatives in Indonesia were limited in terms of geographical reach. Many school-based DRR initiatives focused on the delivery of unnecessarily complex information to a limited number of schools. Again, the substantive content that a focus on curriculum integration implies seemed to tend towards complexity rather than a fundamental concern to deliver practical life-saving DRR information and procedures. In a highly earthquake prone country of 230 plus million people there was clearly an issue of limited supply in relation to demand.

The approach that was subsequently developed by ASB viewed the delivery of DRR education as an informational problem. It was considered that there was plenty of sound DRR information content available, but it was not clear that this content was being delivered optimally and at scale at the local level. Clearly, the education system and structure is highly suited for such delivery purposes. As the overall information delivery system was therefore in place, prioritisation focused on developing simple practical content that could be delivered economically and at scale to schools. ASB was later to extend the model to the delivery of multi-hazard information; however, the initial focus was on earthquakes due to their unpredictability and the potential scale of impacts in the target region. Programming was also directed at the primary school level in order to avoid, as much as possible, the difficulties inherent in changing the behaviour of older individuals with potentially more entrenched attitudes and practices.

Borrowing from the Japanese experience, a programme was developed to introduce the accepted drop, cover, hold-on earthquake procedure and evacuation drills to schools. A training of trainers approach was used to establish DRR focal point teachers who, with guidance, would then train teachers in schools. The materials used were engaging large picture or flash cards that told a story of what to do, and what not to do, in an earthquake in order to introduce to pupils the key messages and the drills. Supplementary materials such as concept-check quiz cards were also included to test whether the information had been delivered effectively. In anticipation of the variable capacities of teachers in rural areas, the story was provided step-by-step on the back of each picture with key points highlighted. More technical information, such as covering plate tectonics, was provided to DRR focal point teachers (master trainers) who could act as an information source for teachers as and when required. Such information was not emphasised within actual schools. Ultimately, the focus was to contribute to preventing injury and loss of life. It was decided, therefore, to not be overly concerned if people understood earthquakes as geological phenomena or viewed them as, for example, acts of God. As an anecdotal aside, personal experience of one author vividly illustrated that hours of studying plate tectonics in school does little to prepare oneself for what to do when first experiencing an earthquake; a point that often seems overlooked in discussions of school curriculum integration. The primary concern was, therefore, on how individuals should act to reduce the risk to themselves and to their peers.

Using this approach the project targeted all primary schools in a district (*kabupaten*). Such coverage was an important consideration. Following regional autonomy the district in Indonesia is primarily responsible for the delivery of development programming and services. The district is also the lowest administrative level at which initiatives can be effectively formalised. In collaboration with local education authorities, and with support from the German Federal Foreign Ministry, the project went on to cover over 6,000 primary schools (ASB, 2012, Project documentation. Arbeiter-Samariter-Bund, unpublished). Additional benefits of not focusing on the curriculum were found. For example, some districts found it more realistic, less costly and easier to integrate drills into extra-curricular activities. The new school curriculum for Indonesia was recently launched in early 2013 (Ministry of Education and Culture 2012). DRR is not included. The risk of catastrophic loss and damage from earthquakes remains, in contrast, ever present. Whether DRR is integrated into the Indonesian school curriculum in the future remains to be seen. Regardless, practical earthquake drills will still need to be conducted routinely and warrant on-going attention within DRR; integration into school curricula should not distract us from this.

12.4 Challenges to Participation Within School-Based DRR

During the implementation of the school-based DRR programme outlined, a situation was encountered that was to challenge the underlying conceptualisations of DRR that were being applied and to force the authors to rethink our work. A teacher noted that although she very much liked the materials that had been produced for the classroom they had one major drawback. One of her pupils was visually impaired.

This conversation triggered an ethical and professional dilemma. Firstly, it was clear that the programme was not adhering to anything but a selective understanding of participation with regard to the children who could engage with, and benefit from, the programme. Secondly, the idea of covering all schools in a district became meaningless if the procedures could not be delivered to all children in those schools. Thirdly, it was apparent, from a DRR perspective, that the child in question was potentially at most risk among their peers. Not only could this child not access the information provided on an equal basis, but that child would face considerable barriers during evacuation following an earthquake due to disruption to the built environment. Such disruption would dramatically impact upon the child’s everyday points of spatial reference. Evidently, the programme was failing to deliver necessary information to all children and was reinforcing already existing barriers to access for that child.

It should be pointed out that at this time there was little in the way of literature to guide the design and implementation of DRR programming for people with disability. Handicap International was in the process of developing a manual on mainstreaming disability into DRR at around the same period (Handicap International 2009). This manual approaches disability-inclusive DRR from a disability, rather than DRR, perspective and outlines the rationale for mainstreaming disability into DRR. The manual primarily focuses on providing information relevant to the overall design of community-based DRR interventions. Within the programme described, awareness of the need for including people with disability had been, in effect, self-generated; it was the next step towards implementation that presented the concern. From the literature, examples of practical DRR tools and approaches that could be adapted for use by trainers and facilitators in field were, and remain, limited. More recently CBM, in partnership with the Disability-inclusive DRR Network (www.didrrn.net), published good practices in disability-inclusive disaster risk management in preparation for the 4th Global Platform for DRR (CBM 2013).

This gap in available resources indicated there was a need to consider approaches to fostering inclusion from the perspective, constraints and aims of

DRR practitioners themselves. Returning to the programme and its specific weaknesses, upon reflection it was decided that the overall programme framework was sound. The benefits of delivering practical DRR information as efficiently and economically as possible in order to minimise injury and loss of life remained convincing. Also, it was agreed that delivering such information at scale remained a priority. The overall delivery mechanism to schools did not appear inherently flawed. It was decided that the information content that was being delivered had value and furthermore that all children could, and should, benefit from such content. The issue, on balance, was the way in which content was being delivered to the final beneficiaries.

The solution was to develop new media for delivering the DRR content in the classroom. This went on to include the development of audio materials for children with visual impairments and to the revision of existing ASB materials by adding video materials for Deaf children. In practice this was easier said than done. Although disability-inclusive DRR has since become a core area of ASB's work, at that time and like many others, the Indonesia office had no direct experience to draw upon. ASB was simply a concerned 'mainstream' NGO that had expertise in the field of DRR and not disability. The solution, however, turned out to be straightforward. The programme team sought the advice, help and personal expertise of people with disability themselves. This included teaming up with a small local DPO, Matahariku, who were working locally on Deaf youth issues. Members of Matahariku later extended their work and established the Deaf Art Community (DAC), Yogyakarta, who recently went on to demonstrate non-verbal DRR communication at the 4th Global Platform for DRR, 2013.

Working in collaboration with these individuals it was possible, and relatively straightforward, to redesign how the programme delivered DRR information content in schools. On reflection, it is also reasonable to say that there was no institutional resistance to moving into the disability field; the primary concern lay in not fulfilling core institutional DRR objectives. That is, the programme was not reaching those potentially at most risk. Subsequently, the programme was extended to deliver DRR information and procedures to 91 special schools and 150 inclusive schools and to children with disability outside of school in 235 villages with support from the German Federal Foreign Office, European Commission Directorate General for Humanitarian Aid and Civil Protection (DIPECHO) and the Australian–Indonesian Partnership for DRR. This experience of implementation also led to further consideration of the function of information in disability-inclusive DRR.

12.5 Disability-Inclusive DRR as an Information Issue

Heeks' (1999) concept of the information chain (Fig. 12.1) presents a simple model for understanding the function of information in development. The information chain identifies key stages from the accessing of information (data) to the resultant desired development outcome or act. The acquisition of actionable knowledge is

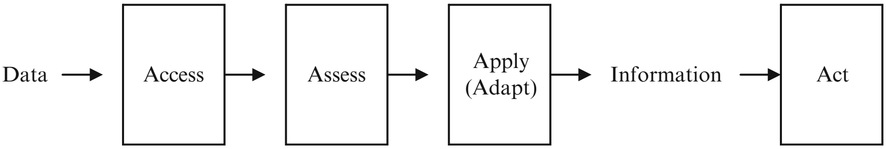

Fig. 12.1 The information chain. Heeks (1999)

presented as a development process that can be broken down for individual attention within information-based programming.

For the purposes of implementation, the information chain was broken down to the components deemed essential to the programme. That is, access and the desired act. This is not to down-play the importance of the way in which the source and content of any information will be assessed by an individual. Nor the way in which individuals may adapt information received to their context and circumstances in order to add relevance and better apply that information. The primary concern was focusing attention within the institution and across teams. Issues of access, whether physical or to services or to information, will not be uncommon to those from a disability background. Crucially, it was access to information, as described above, which presented the major stumbling block. Similarly, the outcome or act that we sought to deliver was of core concern; the establishment of basic earthquake safety procedures and drills in schools. Distilling the information chain to its basics enabled attention and concentration to be paid to these fundamentals.

Issues relating to assessment and adaptation were not, however, ignored. These considerations were addressed as an integral part of the programme design and became the everyday work of facilitators in the field. Materials were trialled, as a matter of course, and facilitators and trainers actively encouraged the adaptation of information and its delivery to local contexts. Examples of such adaptation included the use of local languages or, for some more creative teachers, the inclusion of additional props, such as traditional shadow puppets, during the story-telling component. The way in which information (and its delivery) may be assessed by recipients similarly warrants attention, particularly in the early stages of the project cycle, to ensure both information content and information delivery are appropriate. The way in which individuals may adapt information in order to apply that information, and the resources required to do so, within their particular environment forms an integral part of on-going monitoring, evaluation and review throughout the programme cycle.

Initially, it was considered that teachers themselves were best placed to deliver information effectively in primary schools and there was a concern to not be overly prescriptive in this regard. This was also influenced by the preference to use existing structures and resources in order to facilitate delivery at scale. As programme implementation moved into special needs and, particularly, inclusive school settings there was a need to respond to the varied capacities, experiences and prior (or lack of) training of teachers. With no clear standards or criteria for what an inclusive school should be, many teachers lacked capacity in adapting the teaching-learning setting and process to respond to the educational needs of children with disability. Again, local expertise was sought as a preference. In collaboration with the State University of Yogyakarta basic DRR education was introduced into the university's training for special needs teachers. In turn, trainee teachers were placed in inclusive schools to provide assistance to teachers on general ways to improve information delivery to children with disability. It should be noted that many of the recommendations provided were relatively simple. For example, it was often the case that children with disability would be seated at the back of the class. Just simply rearranging where children sat in the class could contribute to significantly improving access to the lesson content for some children.

Drawing on Heeks, the subsequent Information-Action, or IA, model developed by ASB became a practical and relevant guide for the planning and implementation of more disability-inclusive DRR. Throughout programme design and implementation two simple questions were regularly reflected upon:

1. Can everyone access the DRR *information* you are providing?
2. Can everyone *act* on the DRR information you are providing?

These two questions drew and focused attention to key considerations essential for better establishing practical disability-inclusive DRR programmes within schools and communities.

A further advantage of the IA model is that these two questions can be effectively combined with the Washington Group on Disability Statistics' short set of questions on functioning. The Washington Group short set of questions seek to form a comparable basis for data collection that can be used in non-disability focused surveys, such as, national censuses. The strength of the questions is that they can be applied by a non-specialist while at the same time providing a common basis to overcome variations in classifications of disability between countries. The purpose of the questions is to address 'equalisation of opportunity' through gathering data on 'limitations in basic activity functioning' (Washington Group 2010a). The questions, which may be addressed to the person with disability (ideally) or to the carer (if needed), are presented below. The primary potential relationship to the IA model, and its guiding, questions is provided in brackets.

1. Do you have difficulty seeing, even if wearing glasses? (Information/Action)
2. Do you have difficulty hearing, even if using a hearing aid? (Information)
3. Do you have difficulty walking or climbing steps? (Action)
4. Do you have difficulty remembering or concentrating? (Information/Action)
5. Do you have difficulty (with self-care such as) washing all over or dressing? (Action)
6. Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood? (Information) (Washington Group 2010b)

Through focusing on activity functioning, the Washington Group questions provide a practical, non-technical and relevant approach to addressing disability in DRR. It was also found that within a DRR context the focus on functioning widened the scope of potential beneficiaries to include those who may not consider themselves to be a person with disability. These groups may include the elderly or those temporarily disabled through injury or illness. When combined with the IA model, the Washington Group short questions proved an effective foundation for conceptualising and communicating strategies for not only disability-inclusive DRR, but towards the broader ideal of inclusion for all within DRR in general.

12.6 Implications of the IA Model for Disability-Inclusive DRR

Further clarification of the relevance of the IA model to DRR programming requires addressing each component, and related question, in turn. With regard to the first question concerning information access, some people with disability may have no more difficulty in accessing DRR information than their non-disabled peers. For example, a wheelchair user may be as able to access and understand the concept of what to do during, for example, an earthquake or flood as their non-disabled peers. With regard to the second question, a wheelchair user may face considerable, and potentially life-threatening, barriers to acting on that information within a disaster situation. For Deaf individuals, accessing information may be more challenging. This is all the more the case in the absence of a commonly used sign language as in Indonesia where many use regionally modified American Sign Language. Furthermore, in the Indonesian context few teachers outside of a special school setting focusing on Deaf children may be able to sign. Outside of school, and 74 % of children with disability in Indonesia are estimated to not be in school (Directorate General of Special Education and Special Services 2011), many Deaf children develop *ad hoc* home signing to communicate with family members. As described, the solution in practice was to utilise visual aids and video and also the use of gesture, mime and demonstration with Deaf DPO colleagues taking the lead wherever possible.

Once information has been accessed a Deaf child may be perfectly able to protect themselves and to evacuate independently. A child in a wheelchair may need assistance on both counts. As such, an integral part of disability-inclusive DRR programming must fall back to raising awareness, altering perceptions and encouraging collaboration within and between households and communities. A core aim of establishing routine earthquake drills is to minimise possible panic through repeat simulation and familiarisation. Minimising the panic of an individual also psychologically frees that individual to assist others. Such assistance may include protecting the head of a child in a wheelchair with a helmet, or similar, and ensuring that all can, and do, evacuate safely. It is, perhaps, worth reiterating that the primary aim of DRR is to reduce the risk of death or injury. It is undoubtedly preferable that all should be able to take preventative measures independently; however, the issues that this raises in terms of ideal physical accessibility, built to earthquake resistant standards, and equal access to information forces us to be cautious in our immediate goals. The IA model assists by adding two further components for consideration and reminds us to ask if, realistically, people with disability in our working areas can take preventative measures *independently* in the event of a disaster or if *assistance* is required.

As elsewhere, people with disability in Indonesia face considerable barriers, stigma and exclusion. All too many children with disability outside of school are hidden within households. It was also found that children with behavioural disorders were all too frequently chained or locked away. From a narrow DRR perspective the implications of such actions are all too self-evident in the event of a disaster. From a rights-based perspective they raise deeper concern. From an informational perspective the implication is such children's access to information is severely curtailed. Parents not wishing to raise attention to the fact that their child has a disability through their silence further limit the child's and family's ability to access information or support from outside of the household. This compounds the situation further. It was not uncommon to find households that did not know one of their neighbours was a child with disability. Similarly, it was also not uncommon for parents of children with disability to not be aware of the fact that their child could actually go to school. They, simply, had never asked or never been told.

Importantly, while working with children with disability outside of school the programme did not address the issue of disability head-on within communities. The programme, after all, was primarily concerned with delivering practical DRR information and procedures to all. It was found, however, that DRR can be an effective point of entry for addressing disability and broader concerns of inclusion. This was particularly the case in areas which had recently experienced a disaster, but also proved effective in areas that had not. Discussions of how people had acted in disasters, and how people should act, presented a common and shared experience that all could relate to. For example, if someone in a group had difficulty evacuating, how about an elderly relative, a pregnant woman or yourself if you had had a motorbike accident (and were temporarily disabled)? In this way, the issue of disability could be gently introduced from the perspective of functioning. Disability was no longer something distant or unspoken. Disability became something that held relevance amongst collective experiences and common understandings of disasters. The possibility of disasters are a fact of life for many in Indonesia and, similarly, disability 'is part of the human condition' (UNESCAP 2012a:ii).

12.7 Placing Disability-Inclusive DRR in Context

For the purposes of programme design and planning, it is helpful to place, and consider, the IA model in a broader context. Heeks (1999) stresses the importance of placing information in context and of viewing the information chain as a part of a larger system. This allows us to better highlight and anticipate, from a practitioner perspective, the potential factors and interactions that may impact upon accessing

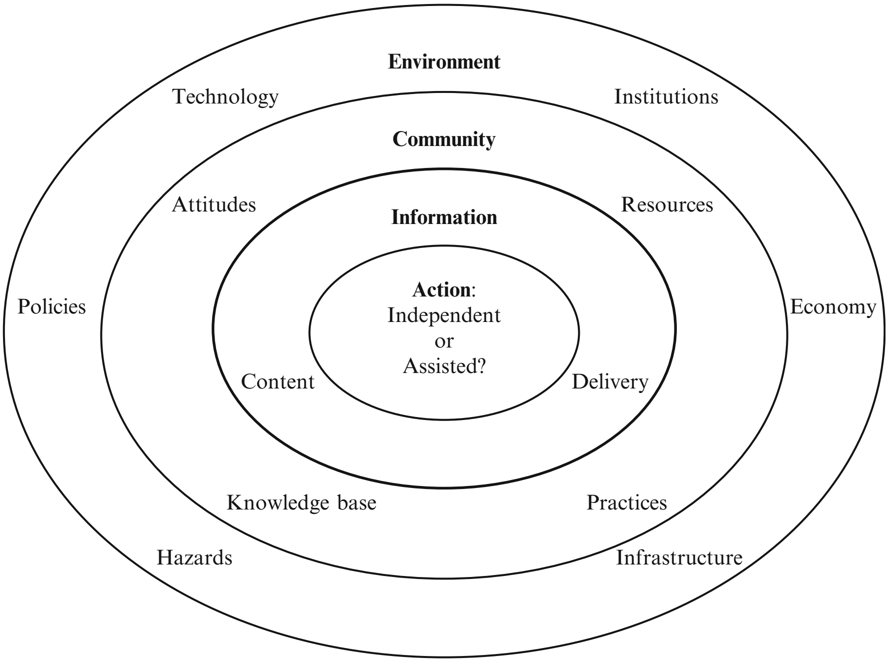

Fig. 12.2 An information systems approach to disability-inclusive DRR

information and, in turn, achieving the desired act. Information and the resultant outcome that the provision of information aims to achieve need to be placed within the prevailing environmental and socio-cultural context to provide more complete understandings. Figure 12.2 presents an information systems approach to assist in understanding, and realising, disability-inclusive DRR. The key elements of the IA model, as described above, are placed central and within a community. In turn, the community is placed in a broader environmental sphere to draw attention to prevailing socio-economic and political contexts as well as hazards that may impact, positively or negatively, upon a programme.

At the centre of this information system (Fig. 12.2) is the development outcome, or act, that is to be achieved. As noted, in a DRR process that aims to include people with disability the resultant act, such as routine evacuation drills, may be conducted independently by the individual concerned. Alternatively, that individual may require assistance on the part of others. This act is, in turn, dependent on the individual being in a position to access information; the information chain also reminds us that any information accessed will be assessed for relevance and, if considered of value and necessary, adapted. To improve the chances of a positive assessment of the value of the information accessed attention to both relevant content and appropriate delivery is required. Any adaptation will depend on the available resources that an individual or, via collaboration, community can command. As such, this contextualisation can assist in better identifying and responding to potential barriers and constraints and to optimise the incorporation of available local resources in programme design.

The immediate context that information-based DRR programming is introduced into is often the community. Community in this sense is interpreted broadly and may equally apply to a geographically bound rural village setting or to a school as a community of teaching-learning practice. As schools are, invariably, institutions situated within, and central to, communities it is not considered overly helpful in practice to draw arbitrary lines between school-based and community-based DRR interventions. The two, and the issues that both give rise to, are interconnected and should ideally be addressed in unison. This consideration becomes all the more pertinent in light of prevailing community attitudes and practices towards people with disability. For example, focusing on school-based DRR to target children with disability will be of limited value if stigma, barriers to social interaction and impartial or questionable existing knowledge bases give rise to practices and attitudes that prevent children with disability from attending school in the first instance.

Working with children with disability outside of school also requires the engagement of household members, neighbours and the wider community. Without establishing broader understandings and collaboration within communities many children with disability will simply not receive the assistance they require in the event of a disaster. A major challenge to disability-inclusive DRR programming is often the lack of data on people with disability and the difficulties of identifying what is often a hidden population. The incorporation of simple research methods such as snow-ball sampling, and combined with the Washington Group questions, are useful in this regard. Work in Indonesia also highlighted that established disaster related actors at the local and community levels, such as first response groups, are often not the most effective groups to deliver DRR information to children with disability or to assist in their identification. Individuals from these groups are often male, young and geographically mobile. Members of women's groups were found, in comparison, to be consistently more enthusiastic and engaged over time. The availability of potential resources at the community level that can over time effectively deliver information, therefore, requires careful consideration.

Establishing working linkages between women's groups and DPOs at the sub-district or district levels proved effective in raising awareness within communities and for maximising the potential for the sustainability of disability-inclusive DRR initiatives at the community level. For many families with children with disability outside of school, simply meeting another person with disability, who was in a position to provide information in collaboration with non-disabled colleagues, could have profound impacts. The idea, for some parents, that their child may also be able to interact and contribute to society was not something they had previously given much serious thought. Such an idea, simply, appeared too distant and the prevailing community attitudes concerning disability often became fatalistically adopted within households. Conversely, it was found that these attitudes were often not as entrenched as they might at first appear. During a DIPECHO funded DRR project targeting children with disability outside of school, 70 children were later placed in schools. These initiatives came from community members themselves. The broader benefits to society as a whole of ensuring that people with disability participate in, and contribute to, DRR programming cannot be overstated. The same naturally applies to all development programming.

A further resource issue that was encountered within schools concerned improving physical access. Minor physical infrastructure improvements can, for example, contribute to removing significant barriers to independent evacuation. Although this was, again, approached from a DRR perspective, building ramps for evacuation purposes clearly has broader accessibility benefits within schools. However, the building of ramps was found to be problematic. Firstly, ramps need to be built to earthquake resistant standards. This, in turn, assumes that the school building that ramps are to be attached to is built to similar standards. Constructing ramps to earthquake resistant standards is currently often outside the financial scope of school budgets. Building to earthquake resistant standards also requires a skill set that is not always available locally. While transferring such skills to local builders is an effective medium for raising both awareness on DRR and also inclusion, there was a concern that this would be difficult for schools and administrators to replicate over the short to medium term. The concern that an earthquake could strike at any time urged timely adaptation.

A further consideration was that to ensure an angle that is accessible to wheelchair users, ramps often have to extend considerable lengths into the school yard depending on the height of the building. As such, considerable resistance to building ramps was encountered in some schools. Schools in Indonesia are generally centred around a common school yard which is surrounded by classrooms in a U-shape on three sides. Resistance to ramps was found to a particular concern in inclusive schools where there was a trade-off between establishing access and maintaining the space available for outside activities. Ramps would encroach on and limit such available space. The practice of pupils moving classrooms each year also meant that, ideally, multiple ramps should be built for evacuation purposes. The solution, again, was relatively simple. Instead of building ramps schools and community builders were assisted to use concrete blocks to make the whole school yard into a concave dished-shape. This had the advantages of preserving the space available for outside activities in the school yard while making all rooms accessible. As such, the potential of independent evacuation (or action) was increased from all classrooms. This approach was also considerably cheaper and local builders were comfortable working with this medium with a minimum of additional training.

The final factor for consideration is the broader context, or environment, that the community and the IA model are situated within. This not only includes the hazards that a community may face, but also the availability of relevant institutions; the policy environment; existing infrastructure; availability of technology and the resources available. The latter is evidently linked to the general health of the overall economy and the level of equity of distribution of the economy's benefits. Although, Indonesia is now ranked as a middle-income country (UNDP 2013) there are large regional disparities and increasing polarisation between rich and poor. The availability of resources at the sub-national level is also constrained by institutional constraints with on-going administrative adjustments following the introduction of regional autonomy. While there has been significant progress at the national policy level in terms of DRR policy, there remain significant challenges concerning the implementation of national policy at the district levels.

At the time of writing, it seems reasonable to say that the broader policy and institutional environment is becoming more conducive to the implementation of disability-inclusive DRR. In fact, at the policy level it is becoming recognised as a necessity. As noted, Indonesia has recently ratified the CRPD with Article 11 addressing risk. Regional governments also adopted the Incheon Strategy to 'Make the Right Real' for Persons with Disabilities in the Asia-Pacific in 2012 (UNESCAP 2012b). Goal 7 of the Incheon Strategy is specifically concerned with disability-inclusive disaster risk management. On the basis of the success of the Disability-inclusive DRR Network (www.didrrn.net) and partners, the declaration of the 5th Asian Ministerial Conference on DRR held in Yogyakarta, Indonesia in 2012 was the most disability-inclusive to date. This initiative, along with the work of other concerned actors and governments, contributed to the Chair's Summary of the 4th Session on the Global Platform mentioning disability for the first time (UNISDR 2013). Through looking at the wider context in which DRR interventions are placed it is not only possible to identify potential constraints and opportunities for making DRR more inclusive, practitioners must increasingly face an uncomfortable conclusion. That is, if people with disability are not included in DRR programming, such programmes we may well be falling behind the game.

12.8 Conclusions

This paper has described how the DRR community, as a collective whole, has yet to adequately engage with disability within its work and in spite of the growing evidence base that people with disability are at increased risk. This, it has been argued, is a serious short-coming if we are concerned, as we are, with issues of reducing risk and if we are concerned, as we maintain, with issues of participation. The paper has also suggested possible reasons for the lack of engagement with people with disability in DRR practice to date. These reasons relate to conceptions that addressing disability involves particular technical expertise, which implies expense, and may be considered beyond the institutional capacity of organisations. However, if organisations are, for example, working on gender issues or age related issues, and do not include women with disability, children with disability or elderly people with disability, the questioning of such a selective and partial approach appears justified. Within a DRR context, it has been argued that such selective participation undermines the basic premise of DRR as, inadvertently or not, those most at risk are ignored.

In response to the above, this paper has outlined experiences of implementation and suggested a model for practically considering inclusion within DRR. A simple alternative framework for addressing disability within DRR as an information issue, the IA model, has been suggested as a relevant point of entry towards achieving the participation of people with disability within DRR. Although, examples from school-based DRR have been emphasised, it has also been noted how this approach maintains relevance within CBDRR actions in general. The IA model forms the foundation of this approach. As DRR practitioners ourselves, we have found this a useful place to begin and to guide teams, focus attention and to develop capacities. The paper has also considered how the IA model may be placed within a systems approach to enrich our overall understanding and to provide the necessary context for effective design and planning. Context inevitably gives rise to complexity. Such complexity is helpful in considering issues such as, for example; sustainability, the establishment of linkages and for identifying resources. However, readers are urged to return to the two simple IA model questions that lie at the heart of this system. Can everyone access your DRR information and can they then act on it either independently or with assistance? This is a point from which to begin.

The best resources to assist in answering these two simple questions, and of incorporating them into programme design and implementation, are locally available. That is, people with disability themselves. Viewed in this light, it is hard to justify not striving to make DRR more disability-inclusive. Inclusion is, if nothing else, a process. To embark on this process simply requires a willingness to begin.

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