

Components of the Humanitarian Innovation Ecosystem

*Interview Summary for the **Humanitarian Innovation Ecosystem** Research Project*
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Executive Summary

This report is the second in a series of outputs from the DFID-funded project on the mapping of the Humanitarian Innovation Ecosystem. The project aims to deepen our understanding of just how the humanitarian innovation ecosystem operates in practice and to make recommendations as to how it might be improved to operate in a more efficient and effective manner. In the preceding report (*Management, Innovation Ecosystems and Humanitarian Innovation: Literature Review for the Humanitarian Innovation Ecosystem Research Project*) the CENTRIM research team explored the key themes in the innovation management literature in order to identify the challenges for those in the humanitarian sector who are seeking to improve the innovation ecosystem.

In this complementary report we attempt to generate a qualitative view from an informed sample of individuals who had expert knowledge of the role and nature of innovation and innovation management within the humanitarian aid sector. It was also designed to help develop and test the evolving systems framework that will be used in the five in-depth case studies which will examine the ecosystem in specific sub-sectors of the humanitarian innovation ecosystem.

Informants included senior staff in donor organisations, governmental and international agencies, NGOs, as well as management consultants, academics and private sector suppliers. By design, the sample can be described as *informed* rather than statistically *representative*. The semi-structured interviews employed a questionnaire based upon six principal components thought to be important in developing a systems map of the humanitarian innovation ecosystem. These include *Resources, Roles, Relationships, Rules, Routines, and Results* – collectively referred to as the six 'Rs'. Observations (of which there were between around 1,500 from 46 in-depth interviews) received for each of the components are summarised by sections in the report. (For the purposes of this report we extended our six Rs model to include to further 'Rs' – *Restrictions and Recommendations*.)

The interviewees were invited to participate in the study under conditions of anonymity and we have liberally used direct quotes from our sample in order to convey their strength of feeling and so as to reduce the likelihood of misrepresenting their views. It should be emphasised that both the views expressed and the recommendations put forth are those of the interviewees and do not necessarily represent the views either of the sponsors of this project nor of the researchers.

Resources: The sample felt that along with the growing recognition of the importance of innovation for the humanitarian aid sector (within some quarters), the financial resources for innovation processes was also increasing. However, others felt that there still remained considerable ignorance or scepticism about the role of innovation, and the overall level dedicated to innovation was either still insufficient or not being allocated in appropriate ways. In some instances it was felt that either the process of using finance to trigger innovation was being managed poorly or that policies and attitudes within the sector activity inhibited innovative activity. Separate (from core funding), dedicated funding for innovation was described as being the norm, and while new models of innovation funding are being adopted by different donors/agencies there have yet to be any systematic evaluations or comparisons

Components of the Humanitarian Innovation Ecosystem

between different funding models. Indeed, there was significant unevenness in the way the process was conceptualised and being advanced across donors and the major delivery NGOs.

Donor organisations were seen as being the key players within the Humanitarian Aid sector but, with a few notable exceptions, were perceived as often having a dampening effect on innovation. There was concern that while awareness was growing within the sector, there was still little real understanding of the underlying processes, competencies and time required for successful innovation to occur and occur repeatedly. As a consequence (perhaps) of the overriding emphasis on responding to crisis and low levels of risk tolerance, different actors within the system tended to compete to secure access to more funding based upon their speed of response or coverage to emergency situations rather than on their belief in the need for or ability to encourage, promote or scale-up innovation. Furthermore, the dominance within the sector of large donors and agencies, raised concerns about a lack of R&D funding available to smaller actors in the sector and an inefficient interaction with interested private sector companies. Although there was a high degree of consistency in the responses from the sample, it was also noted that the sector is not homogenous and real differences in sub-sectors interests and abilities to innovate varied.

Roles: As the key providers and allocators of resources, the main donors and aid agencies are identified as having a crucial role to play in stimulating and guiding innovation. For some, it is the donors more than the aid agencies that need to take the initiative. It is a major challenge for innovation if those organisations that are in the best position to drive the process are constrained in their willingness and/or ability to do so. There were varying degrees of optimism among the respondents about the willingness of the key actors to innovate, also reflecting variability across the sector.

While it obviously makes sense to engage the keystone players of any ecosystem in innovation because of their centrality and influence, the interviews make it evident that the *usual suspects* with their established views and ways of doing things can act as a big brake on innovation. For this reason, new players (or those at the periphery of the system) can be an important source of new ideas that can potentially disrupt the status quo. As explained elsewhere, the growing role of foundations has been an interesting development in terms of bypassing some of the limitations of the humanitarian establishment (see sections on Rules and Restrictions). There is also some interest in the sector in more open models of innovation.

In some cases, those outside the normal channels are not always new players but mostly come across rather as *mavericks*, *entrepreneurs*, and *iconoclasts*, some of whom work in (or with) established organisations, yet manage to insulate themselves from the usual ways of doing things. Interestingly, this also applies to those from the multi-market private sector who face the challenge of competing for resources and ensuring regular access to company knowhow in order to bolster their product offering to the humanitarian sector. For those private sector actors where the HA sector was the primary market, a common observation was that a huge amount of time and effort was expended just figuring out how the HA system worked and how to get in front of the right people in the donor and delivery agencies. Some donors (such as DFID) and a few delivery agencies were singled out as having more progressive and *user-friendly* systems but others retained an antagonism towards the private sector that made real co-operation difficult.

Components of the Humanitarian Innovation Ecosystem

The roles in any innovation ecosystem are not pre-determined. They are the result of decisions and activities that necessarily entail the formation and reproduction, but also crossing and dissolution, of boundaries. These boundary processes are important because they shape which practices are possible, expected, and permissible, as well as those that are constrained or proscribed. Good examples of this frequently mentioned by the sample respondents concerned the division between the humanitarian and development sectors, as well as those between the different clusters of activities within humanitarian aid. This process of classification has real effects because it shapes what people are able to do, but it also suggests the potential for relabeling activities, which might allow the novelty needed for innovation to be introduced.

Relationships: The humanitarian innovation ecosystem is complex and comprised of numerous organisations, groups and individuals. The nature of the relationships between them are also crucial in shaping the effectiveness of the innovation process and a number of challenges and opportunities were identified by the sample in terms of working across different boundaries of knowledge, interests, and political influence. As the responses demonstrate, relationships between the different actors are also critical for the creation, circulations, development and the deployment of resources central to innovation, including knowledge and ideas, finance, people, materials and technologies. This, in turn, is influenced by the different character of relationships, such as the extent to which they are competitive or cooperative. Although inter-relationships between actors are often a necessary factor in facilitating innovation they can also be a barrier to innovation, especially where the way that existing relationships are configured effectively excludes or limits the participation of certain groups, such as the private sector or local communities.

A key feature of effective innovation is being able to connect the right people and organisations together at the right time. Opportunities for interactions referred to included conferences, workshops, and symposia, the development of consortia and peer-group and practitioner working groups, networks and platforms. Although the interviews provided evidence that the opportunities for involving a diverse range of stakeholders has increased, the respondents nevertheless identified a considerable amount of insularity within the system and a number of other limitations. These are primarily about the limited extent to which new or non-traditional actors are able to participate in the ecosystem as it is currently structured. Two groups which were singled out as particularly in danger of being excluded from the innovation process were affected populations and the private sector.

Rules: A broad definition of rules was adopted, covering both more formal governance mechanisms, such as procedures, specifications, standards, regulations, contracts, and incentive systems, as well as more informal influences, such as beliefs, norms, motivations, and expectations which are themselves important for how the former are interpreted and applied. Rules are obviously significant for structuring the innovation process, guiding the allocation of resources, defining roles, and shaping relationships. The main message from the interviews was that the combination of formal and informal rules currently operating within the humanitarian aid sector do more to constrain rather than enable innovation. Where innovations do take place these are often in spite of the rules rather than because of them. This is characterised by the role of mavericks and entrepreneurs who are forced to work partly outside the normal rules because of both invisible and visible barriers.

Components of the Humanitarian Innovation Ecosystem

A key feature of the humanitarian aid sector is the overwhelming influence of accountability on the majority of activities. This is because of the dominant funding structure in which it is crucial to demonstrate that money from donors has been used appropriately. The result has been an emphasis on compliance and a high aversion to risk. The focus on accountability and the way that risks are managed, is that where innovation occurs it is more likely to be of an incremental rather than radical nature. The existing rules worked against professed intentions, such as involving local populations and businesses more extensively and the restrictive effects of procurement regulations on suppliers where likely to reduce the capacity for innovation.

Routines: Routines are patterns of activity and behaviour that form the detailed building blocks of the innovation ecosystem. As with rules, they can be more or less formalised. A common refrain from the interviews was the need for more systematic and explicit routines for innovation, suggesting a preference for formal rather than informal routines. Nevertheless, the contribution of informal routines should not be underestimated. Routines can themselves also be the target of innovation.

The sample perceived innovation in the humanitarian aid sector to be limited by a number of constraints. In many cases these are about overcoming established routines, especially where these are excessively complicated and over-bureaucratic. Reflecting on how well developed routines are in the various stages of the innovation process, there was a general feeling that identifying user-needs is not a particularly well organised activity and may be quite limited in many cases. Furthermore, the emphasis of the sector on operational activities means that there is not the physical or cognitive space for encouraging new idea formation. Underpinning this well modulated critique was an understanding that change of the sort that seems obvious to those outsiders aware of the importance of innovation in other sectors, and a significant shift of resources from short-term to strategic use, was likely to be slow because of a lack of incentives for change and the systemic constraints that are deeply embedded in the sector.

Results: This category focuses on the extent to which innovations are being introduced into the humanitarian aid sector and the degree to which they are assessed at different stages in their life-cycles (from introduction to scaling-up). Interviewees were inconsistent in how they defined innovation and many seemed to restrict their thinking to the more radical and transformational examples that are often referred to and are considered to be *iconic* in the field. Donors were regularly accused of only being interested in funding things that were tried and tested and some agencies and NGOs of being insular, of being overly concerned with their *brand*, and having adopted a *not invented here* mentality. However, even amongst those organisations that have bought in to the need for more innovation, questions were still raised about the lack of skills and competencies required, especially as to their abilities to assess and evaluate the relative value (and impact) of different innovations. The sector was also criticised for the lack of ability (or concern) about building an evidence base for different approaches to products and services and linking evidence to policy making. There is, however, evidence that a serious discussion has begun about adopting a more strategic approach to innovation. Interviewees (from outside the sector) also provided examples from other sectors (e.g. international development and the military) that could provide useful pointers for those working on humanitarian aid.

Components of the Humanitarian Innovation Ecosystem

Restrictions: More comments were generated when asked about restrictions to innovation than any other category explored. This was not surprising as each of the previous components were narrowly defined and restrictions builds upon and broadens the perspective. In order to cope with the volume of observations, this section is divided into numerous sub-sections including mind-sets, cultures, structural and procedural issues, risk aversion the lack of skills and competencies, the difficulties of identifying needs, and interacting with the private sector.

The prevailing mind-sets and cultures observed within the sector were seen as amongst the most important factors stifling the innovation process. In addition to regularly referring to the nature of the work undertaken in the sector as conditioning a risk adverse mentality, respondents place blame on the prevailing business models which do not, necessarily, embrace modern best practice and encourage adherence to highly bureaucratic processes, lack of incentives to innovate, the reluctance to collaborate, etc.

It was also felt that it was important to address structural and systemic issues including a range of procedures and practices such as not having suitable hubs or portals for information exchange, a reluctance to collaborate, a tendency to restrict experimentation by financial approaches which are heavy on reporting back and biased towards larger operators.

In general funding models of donors and agencies were seen as largely having been designed for the cost effective delivery of the largest possible number of consumable products and not for systemic innovations that might, for example, lead in future to fewer such products being needed in the first place. Although there was a recognition that affected groups needed to be more involved in decision making there was frustration expressed at the difficulties in so doing. Consequently, such groups were largely shut-out of decision making and needs identification and any real route to providing user input to the innovation process. And, although the private sector already plays an enormous role within the delivery of humanitarian aid, the relationship between manufacturers and suppliers of goods and services was, in the opinion of many interviewees, arms-length and clearly sub-optimal in terms of encouraging innovation. The notion of having a system in place for learning in real time what works and what doesn't from the ultimate end-user perspective and using such knowledge to guide innovation and delivery was not highly evident amongst many interviewees.

Recommendations: Despite the large number of inhibiting factors identified by the sample, not all saw the problems associated with improving the humanitarian innovation ecosystem as insolvable. Respondents clearly perceived the need and desirability for reform of the system, although there were considerable differences in opinion as to the degree of change that was required and the form it should take. Three different types of innovation were identified to which attention needed to be paid. These included innovation to the way the entire system is organised; innovation to the way new technologies and practices are identified, developed and disseminated; and innovations related to the what was referred to as the *principles* of humanitarian aid such as how and by whom the mandate is understood and delivered.

For some incremental change was favoured, because of the nature of a crisis driven sector as well as the potential it provided for experimentation and feedback, given the large number of disasters each year. For the incrementalist a deepening and broadening of innovative activities in organisations was desirable, along with a more in-depth understanding of how to manage

Components of the Humanitarian Innovation Ecosystem

innovation, more evidence based policy, and partnerships between different actors. The more radical approaches suggested included the creation of an independent research centre, the establishment of a senior advisory council for the sector, and new business models bringing together aid agencies, governments and the private sector.

For many, regardless of where they would place themselves on the incremental/radical change dimension, there was agreement that more ring-fenced funding for R&D from diversified funding sources was needed (including venture capitalists), the development of a culture of experimentation in exploratory spaces, the need for trials, impact assessments and evaluations, greater collaboration with new and existing partners (whether in the public or private sectors) and finding new ways to interact with affected groups which draw them into the innovation ecosystem.

Table of Contents

1 Introduction	1
1.1 Work package description and aims	1
1.2 The sample	1
1.3 Questionnaire development	2
1.4 Analysis	2
2 Resources	4
2.1 Availability of finance	4
2.2 Donors' influence in the Humanitarian Innovation Ecosystem	5
2.3 Innovation funding models	6
2.4 Sectoral differences	8
2.5 Scaling-Up	8
2.6 Time, space, knowledge and managerial capability	9
3 Roles	11
3.1 Key factors in the innovation process	11
3.2 Bringing new actors into the innovation process	12
3.3 Roles and boundaries	13
4 Relationships	15
4.1 Opportunities for interaction	15
4.1.1 Conferences, workshops, and symposia	15
4.1.2 Consortia	15
4.1.3 Peer-group and practitioner working groups	16
4.1.4 Networks and platforms	16
4.2 Limits to interaction	17
4.3 Collaboration and competition in relationships	19
5 Rules	20
5.1 Rules, risk, and accountability	20
5.2 Rules, interests, and intentions	21
5.3 The power of informal rules	22
5.4 Rules and incentives	23
6 Routines	25
6.1 Routines and innovation activities	25
6.1.1 Identifying needs and opportunities	25
6.1.2 Ideation and knowledge search	25
6.1.3 Knowledge integration	26
6.1.4 Solution development and testing	26
6.1.5 Scaling-up and diffusion	26
6.2 Routines as constraints	27
7 Results	28
7.1 Extent of innovative activity	28
7.2 Lack of necessary skills	29
7.3 Linking innovation, evidence and policy	30
7.4 Lessons from other sectors	31

8 Restrictions	33
8.1 Mind-sets, mental models, and organisational culture	33
8.2 Structural constraints	35
8.3 Financial procedures	35
8.4 Aversion to risk	37
8.5 Identification of needs and solutions	37
8.6 Skills and competencies	38
8.7 Private sector	39
9 Recommendations	42
9.1 R&D funding	43
9.2 Innovation spaces	43
9.3 Research trials and impact evaluation	44
9.4 Collaboration and the private sector	46
9.5 Engaging affected groups	46
9.6 New approaches from the donors	46
10 Conclusions	48

Acronyms

A&E	Accident and Emergency
CBHA	Consortium of British Humanitarian Agencies
CMAM	Community-based Management of Acute Malnutrition Model
DFID	UK Department for International Development
ICFC	International Committee of the Red Cross
IFAD	International Fund for Agricultural Development
IFRC	International Federation of the Red Cross and Res Crescent Societies
MSF	Médecins Sans Frontières
NGO	Non-Governmental Organisation
R&D	Research and Development
UNDP	United Nations Development Program
UNICEF	United Nations Children’s Fund
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
VSO	Voluntary Service Overseas
WASH	Water, Sanitation, and Hygiene
WFP	World Food Program

1 Introduction

1.1 Report description and aims

This report provides a qualitative view¹ as to the functioning of the Humanitarian Innovation Ecosystem from an informed sample of individuals who had expert knowledge of the role and nature of innovation and innovation management within the humanitarian aid sector. The research was designed to complement the review of the innovation management literature (Bessant et al 2014)² and to inform the development of the case study approach (the following work package in the CENTRIM Humanitarian Innovation Ecosystem project). Specifically, the proposal called for:

A wide range of interviews (approximately 40) will be conducted with individuals who are representative of some of the principal actors (and thinkers) within the field of humanitarian aid and innovation studies. This work package will provide insights as to how those participants in this humanitarian innovation system (whether they are aware of such a system or not) perceive the system operating and identify key factors which are either barriers or facilitators for innovation within the sector.

1.2 The sample

Initially the project team drew up a list of potential interviewees with input from both DFID and UNOCHA. Additional names were added as the *semi-structured* interviews were conducted and interviewees made suggestions of people or organisations they thought should be included. In total, eighty-five invitations to participate were sent out and in-depth interviews were held with forty-six individuals. As intended the interviewees were heavily biased towards managers, administrators and practitioners in the field of humanitarian aid. They included senior staff in donor organisations, governmental and pan-governmental agencies with responsibility for providing emergency relief, and a range of NGO's directly responsible for implementing relief operations. The sample was supplemented by both individuals outside the direct operational activities in the sector and included academics and management consultants, all of whom were knowledgeable about the latest thinking and practice within the field of innovation management. Finally, a number of private sector suppliers of humanitarian aid products and services were included. The sample, therefore, can be described as *informed* rather than statistically *representative*.

² Bessant, J, Ramalingam, B., Rush, H., Marshall, N., Hoffman, K., and Gray, B. (2014). *Innovation Management, Innovation Ecosystems and Humanitarian Innovation: Literature Review for the Humanitarian Innovation Ecosystem Research Project*, CENTRIM, University of Brighton working paper.

1.3 Questionnaire development

A draft questionnaire was designed, piloted, and redesigned by the project team. The final version included six principal categories (referred to as the Six Rs, plus two subsidiary cross-over categories), each with a list of questions, including:

1. *Resources*: what resources - finance, time, knowledge, technologies - are available for humanitarian innovation, and how are these deployed?
2. *Roles*: who plays what roles in innovation efforts and processes? Are there observable patterns? What, specifically, are the roles of innovators, end-users, front-line workers, brokers, researchers, private sector and *non-traditional* actors?
3. *Relationships*: what kinds of relationships and networks exist between actors in the innovation ecosystem (competitive, collaborative, contractual, commercial, etc.), and how do these shape innovation efforts?
4. *Rules*: what formal and informal rules pertain to humanitarian work and humanitarian innovation specifically, and how do they serve to shape roles, determine relationships, resource allocations, and shape innovation processes?
5. *Routines*: what are the specific ways in which innovation processes work in the sector, and how well do these work? What are the dynamics of these routines - e.g. linear, predictable; non-linear, unpredictable?
6. *Results*: how do innovation results get determined, and by whom, and how does this impact on the success or otherwise of innovations?
7. *Restrictions*: what are the limiting factors that inhibit innovation, such as space, time, culture, mind-set, politics, contexts?
8. *Recommendations*: what are your ideas for how this ecosystem could be transformed to enhance humanitarian innovation and better deliver against the stated goals of humanitarian aid? Radical ideas? Incremental ideas? What are the potential entry points for change? What is feasible given the current system?

1.4 Analysis

Interview notes and transcripts were independently annotated and coded (and compared for inter-coder agreement) by two members of the team. A qualitative data analysis software tool (Atlas.ti) was employed to organise the coded material. Because the software allows almost unlimited code filters, we extended the analysis to include a broad range of categories that were additional to the 6Rs. Our rationale for adding additional codes was:

- to provide finer-grained detail on particular aspects of the central six R codes;

Components of the Humanitarian Innovation Ecosystem

- to identify themes of related importance; and,
- to extract data on particular examples and types of innovation, especially those relating to newer models of innovation.

These categories included: creativity, crowdsourcing, emergent vs. planned innovation, entrepreneurship, frugal innovation, incentives and motivation, industry comparisons, new models of innovation, norms and beliefs, open innovation, platform innovation, politics, user needs and engagement, and user innovation. Use of the qualitative data software programme has allowed us to construct a database of responses to which we intend building upon during the course of the project, adding new interviews as they occur.

What follows are brief summaries for each of the 'Rs'. Responses to questions could (and have) received multiple codings and there is some natural overlap between component Rs. Nearly 1,500 observations have been coded under the various categories, of which nearly 1000 related to our components.

Each section of this summary report includes numerous direct quotations from the interviewees in order that the *voice* of the sample could be heard. Although the research team takes responsibility for the framework and selection of material included, the views are those of the sample and are not, necessarily, those of the researchers nor DFID.

2 Resources

2.1 Availability of finance

A common refrain amongst those interviewed was that *the humanitarian sector has a lot of money but we have to find the right way to use it*. This is not to say that respondents felt that the level of resourcing in the sector was sufficient, but that what was available was not being sensibly allocated (at least as far as innovative activity was concerned). One emphatic response described funding in cyclical terms, claiming that the way financing works was:

no money, no money, no money, DISASTER, loads of money, loads of money, no money, no money, no money, no money ... While perhaps overstating the actual position, the interviewee went on to note that ... The irrational way in which it becomes available for use in the sector is fundamentally not conducive to innovation. The business model is wrong ... it doesn't prioritise research and doesn't devote resources for innovation.

A majority of the sample felt that finance for innovation was in short supply, typically blaming the historical structure of the sector, the financial models in use, the lack of incentives and even the personality characteristics of those who chose to work in this field.

What is clear is that although awareness for the need for innovation and the financial resources available for innovation have been increasing, it is difficult to discern whether this is happening relative to an overall increase in humanitarian spend nor what proportion of such resources are dedicated to innovation. Certainly new models of innovation funding have been adopted (see below), but there has yet to be any systematic evaluation of the different funding models employed nor whether the amounts available are commensurate with the problems that need to be addressed. There is a suspicion that there is a relabeling or blurring of funding between what had been seen as of traditional research programmes into innovation initiatives and funding. One interviewee referred to an on-going discussion within the sector as for the need for government donors to adopt a policy of devoting 1% of their funds for innovation which, as he pointed out, implies that it must be much less than 1% at the present time.

After *restrictions*, it was the *resources* component of our 6R interview structure which attracted, by far, the greatest number of observations from our sample of informed interviewees. Two quotes typify the importance of this component within the humanitarian innovation ecosystem. The first points to the structural and historical shackles that the sector faces:

Despite glimmers of a system of innovation, the sector is still a prisoner of its funding structure and political history ... it is very competitive at all levels between donors, agencies, suppliers, etc., and all focused on securing access to more funds ... not necessarily producing better sways of doing things called for by the voices/demands of the end user/market. There is lip service to higher ideals of co-ordination, co-operation etc.

Components of the Humanitarian Innovation Ecosystem

The second quote, while seeming to acknowledge the problem, recognises the need and potential for change.

The financial structure needs to welcome, not deter, innovation and change.

2.2 Donors' influence in the Humanitarian Innovation Ecosystem

Donor organisations were typically perceived as the lynchpins of the humanitarian aid system as a whole. As their demands influence allocation of resources, they were also seen as being, with a few notable exceptions, a dampener for innovative activities. Their predominant concern with emergency and short-term relief seems to have meant that innovation funds are limited and largely separate from core funding. As one senior aid administrator suggested:

Innovation is not well funded. The business model is orientated towards crisis response, there have to be pictures of starving people on the front pages of newspapers before we get money.

And another added:

If you shake your tin asking for money for something related to an innovation that could help produce clean water, people will say I have to pay my rent. If you show them a picture of a starving child and say that he is like your own they will give.

General references to donors and their culpability (as inhibitors of innovation) tend to mask the fact that there are a variety of types of donors which the sector rely upon; each having different motivations, priorities and level of available resources. Donors might roughly be divided into public institutions (e.g. government ministries or departments), the general public, private individual, institutional and corporate philanthropists.

The majority of people, departments, and systems, in humanitarian NGOs were described as being orientated towards where the money comes from. While as the above quote implies, there is little opportunity to generate resources for innovative activities from the general public, others felt that institutional donors could be doing much more:

Donors could do a lot right now, without spending any extra money, just by changing the rules and lightening up a bit on the bureaucracy and allowing the programmes to be field driven.

Large donors, whether public institutions or foundations were primarily seen as responsible for starving the smaller NGOs of any funding for R&D (*not even small scale R&D funding for kernels of ideas to be tested or explored*); of not being willing to fund innovation and having little understanding of its process. Others point to the tendency to spend money in large chunks:

... therefore necessitating larger intermediaries, less flexibility and much more ability to place pressure on cost reduction at the expense of flexibility and innovation.

Components of the Humanitarian Innovation Ecosystem

Such expressions of concern were routinely forthcoming from both the smaller NGOs we talked with as well as private sector suppliers of goods and services required for humanitarian relief. They perceive such donors as setting the bar high in terms of risk avoidance, and on insisting that the money only be used on basic necessities.

Others pointed to a perceived change in the role being played by some of the larger institutional and corporate philanthropists. As foundations are not necessarily tied to tax-payer considerations there is a perception that there has been a shift in their thinking and behaviour over the past few years. One senior executive of a large private foundation described their relationship with a large UN agency:

Three years ago there was nothing. But they have made tremendous progress with the help of our funding and I'm very happy with what I see and how they have turned that funding into results. We have provided a lot of money to (agency name withheld to assure anonymity) because we feel that the private sector should get more involved in the Humanitarian Aid sector but the most important thing we have done is to make them think differently about the refugees particularly. Secondly we have encouraged them to actively drive innovation and new thinking and to question the service they provide and look for opportunities to be better.

2.3 Innovation funding models

Some of the NGOs interviewed pointed to constraints existing within the current ecosystem either because their ideas did not fit into existing programmes, because the bureaucratic hurdles were too daunting, or because there was just no money within the UN system earmarked for innovation. Frustrations were expressed that *it is the way that the humanitarian sector is built; that agencies only bet on what you know you will get results on; that it is like bank manages only being willing to lend money to people who have got it, or that we have difficulty in getting new ideas funded because they don't fit into a current programme.*

However, according to our interviewees, the last five years has witnessed an increase in awareness amongst many actors within the sector of the importance of innovation, as well as a willingness to experiment and develop different models of funding. These range from simply designating money for R&D budgets without necessarily developing criteria for priority use, through to more strategic and complex approaches that are trying to link policy, evidence and innovation funding. Such actors in this field have, to some extent been following the longer and more in-depth experience of the commercial private sector's approaches to stimulating innovation and have been attempting to mimic initiatives straight out of the corporate sectors playbook (e.g. Innovation Labs).

Several respondents used the phrase *pockets of innovation* and refer to some, by now, fairly well known funding approaches:

There are pockets of it and it is fair to say that within DFID there is one of the largest and more systemic approaches to investment in this area; there are other bits but it is very uneven. UNICEF has a big infrastructure around innovation not just in the humanitarian space but more generally and that is able to crowd in quite a wide

Components of the Humanitarian Innovation Ecosystem

range of funding. UNHCR's innovation hub is quite interesting. I think the donors are beginning to ask how to do this.

We expect DFID to invest in very different ways of doing business, not just in the funding of innovation, but in the funding of programmes. This will accelerate adoption more than anything else.

The UNHCR has innovation labs in a number of different areas around the world where they develop and test solutions and where they actually work upon the ideas from people working in the field. These provide platforms for crowd-sourcing and help mature innovations to a level where they can be eligible for funding.

The partnership between a private foundation and UNHCR was noted by a couple of interviewees, and was described as:

We put up the money to get this unit started, to enable them to pay salaries for example, because otherwise it would have taken a very long time for the system to make it work. This enabled them to get started on a very low-key basis and start to plan and create results. We contributed funds for the start-up to get the ball rolling with the expectation that, once the benefits were demonstrated, other funds could take over. Now we have set aside a fund so we give them a certain amount of money every year which they can use to fund specific projects.

The Humanitarian Innovation Fund was also noted as playing an important role as a model of responsive mode financing that could provide an entry point for NGOs (of all sizes)

I think that the HIF was the first cross-sectorial fund but I think that there were individual mechanisms beforehand and some donors tried to do R&D but some of the single agency mechanisms were funded by trusts and foundations -such as Oxfam's innovation prize but it is not the core funding, more things around the edges.

US AID has development innovation ventures which works across humanitarian and development but it has been running for less time than HIF. A number of individual agencies, like WHP, have programme prizes, or it's partners specifically for the delivery.

These are all encouraging signs that there is experimentation in the sector and a growing sophistication within major donors. There was, however, still concern within our sample that the initiatives have, thus far, been limited; that there are still few organisations that have their own innovation funds; and that most project and programme funding still encourages and sustains a *tunnel vision*. There was disappointment expressed that people have been trying to *slip in different things* in individual agencies and that there has yet to be a *flagship innovation programme* - that it has all been on top of core funding.

In spite of such criticism, it is clear that some major donors and relief agencies have both raised their awareness of the role that can be played by innovation and are prepared to take the

initiative. According to some of those interviewed, it would appear that some have jumped in wholeheartedly in order to establish a position in the sector while others are taking a more circumspect and deliberate approach. What is not, as yet, clear is whether there have been any attempts to access the relative merits of different approaches and financial models in both the development of the humanitarian innovation ecosystem and, ultimately on affected individuals and communities. The need to undertake such investigations was certainly recognised by those within our sample who intended taking a closer look at the new financial models, and who understood the need to mobilise serious financial resources, as well as the sharing of information and the pooling of resources and data.

2.4 Sectoral differences

Thus far we have been referring to the humanitarian aid sector as if it is homogenous. While this reflected the way that those interviewed talked about the sector, several did go out of their way to emphasise that there were notable differences in the extent to which research and innovation was being conducted by sub-sector. In some there was a longer tradition of R&D resulting, it was suggested, because of the transfer of individuals and knowledge from other sectors into humanitarian spaces. Such mobility was credited with leading to a considerable amount of incremental improvement in performance within the sub-sector.

A good example comes from the WASH cluster, which was described by one interviewee in the following way:

Something like WASH programming in which you have people who were water engineers or public health engineers, etc., often in a development context or a military context, who find themselves working in a humanitarian context and they will bring in and transfer some of that knowledge has led to steady innovations in what is being delivered - you could look at some of the products that Oxfam have brought in over the last 15 or twenty years, the Oxfam bucket, the taps they use, mass water holding, etc., and you can see a systematic linking within the sector, private actors, specialist academics, etc., working within that field. WASH might be the most advanced.

Attention was also drawn to sectors (or at least NGOs within specific sectors) such a health and nutrition in which you have a similar situations in which people come from outside the sector and who have a very different expectations for R&D:

So particularly for the medical agencies like MSF or those that focus on quite specialised nutrition programming such as Action Contre la Faim in France.

2.5 Scaling-Up

Many of the interviews appear to have focused upon the front-end of innovative activities. Several, however, pointed out the importance of ensuring that sufficient resources were available to take innovation to scale. One interviewee specifically referred to the work of the Gates Foundation and their focus on such scaling-up:

Clearly innovation is a key part of their activities, but at another level their main focus seems to be in leveraging the cash. So they will do stuff and tackle big problems but

what they are trying to do is about scale rather than about a completely new way of doing things. They would say that we know the answer, the problem is spreading it at scale, so let's use our influence to deliver what we think is the right answer as oppose to someone thinking well here is a problem that no one has every really thought about and the answer is what could we do differently.

2.6 Time, space, knowledge and managerial capability

Thus far we have concentrated our discussion of the *Resources* component of the interview framework on financial resources, largely as that was the overriding concern for those in the sample. As we have pointed out in the introduction to this summary, innovation will not occur without the related resources such as time, space, and capabilities. Amongst our sample, it would appear that time for innovation is universally underestimated. This probably says as much about their understanding of the processes underlying innovations as it does about the culture (or structure) of the sector – although some of the financial models referred to above do seem to have an embedded understanding of the need for space and time.

I think there are ways of creating safer spaces for people to do testing and try out new ideas and have the sort of space to have the resources, the support, the capturing of knowledge and sharing.

Others were not so certain, noting that:

Three year grants common in development world. In the humanitarian world its usually 12 months which makes less space for innovation. Only enough money for one project to get spent and done. No room for innovation.

Others were also more specific in acknowledging the missing resource components and were specifically concerned about the limitations that were likely to be caused by the lack of human capacity within organisations to absorb changes. But several aspects of existing deficiencies in the managing innovation were noted. For example, the need:

To get better at scanning to see what is out there in order to be able to engage with such companies who could innovate and sell things back to them, they need to learn more about IP and how to use the knowledge of what they know in the field, to do field testing, and to be more savvy about recognising that value and bargaining with companies that have different value propositions to deliver new products and systems.

The availability of such skill sets were seen as variable with organisations such as World Vision, UNICEF, UNHCR and WFP having been proactive and strategic in attempting to build up such capabilities. However, interviewees pointed to short-termism, poor staff retention, lack of promotion related incentives, all operating as brakes on the process. These might all be considered as part of the culture of the sector, just as with the views expressed that one does not have the time to innovate nor should one be allowed to take risks which might detrimentally impact upon affected groups. Views and attitudes such as these are easily embedded over time, despite the fact that much of the humanitarian aid budget goes to chronic situations, rather than emergency relief. As two experienced donor policy-makers said:

Components of the Humanitarian Innovation Ecosystem

Underneath, at the more immediate operational level is a frustration that particular technical and operational decisions are horribly familiar -refugee camps today as being similar to what they were ten years ago. This is crazy that we are doing the same old thing.

Clearly, resource providers (donors) need to see a balance between protecting core business/objectives and promoting the new.

3 Roles

This section describes the main issues that the sample of respondents raised with regard to the question of roles within the humanitarian innovation ecosystem. Although this necessarily makes reference to the more general distribution of roles within the sector, the specific focus is on the various roles that different organisations, groups, and individuals play in the innovation process, either positively or negatively.

3.1 Key actors in the innovation process

As the key providers and allocators of resources, the main donors and aid agencies are identified as having a crucial role to play in stimulating and guiding innovation. For some, it is the donors more than the aid agencies who need to take the initiative - *My opinion is that the only people who can drive innovation [are] the donors*. Unfortunately, many are of the opinion that this is not taking place.

... the donors simply do not drive innovation nearly enough ... the agencies do ask for improvements etc., but hard to judge whether this comes out from them as a result of an organised process or not.

This implies that some aid agencies are seeking to promote innovation. Indeed, ensuring that innovation is on the agenda of aid agencies is clearly critical because they are the main customers of resources and are responsible for delivering responses on the ground. Since the UN is such a large player in this respect, it is encouraging that many of their agencies have recognised the importance of innovation.

UN agencies are increasingly doing work on innovation, WFP, UNICEF, UNHCR - but it is important for them not to create a 'cult of innovation'. WFP has taken innovation very seriously out of necessity, and a need to strive for relevance - they have 100+ people working on it now.

The comment about not creating a *cult of innovation* suggests that this is something that needs to be pursued for the right reasons, rather than just for the sake of it or because it sounds good. However, there were several respondents who suggested that these central players, that should be in a good position to encourage innovation, are not actually doing so. According to one interviewee, *the donors but especially the agencies are conservative, unambitious, bureaucratic*. This theme about the constraints of procedure, bureaucracy, and norms and beliefs will be picked up in more detail in the sections on *Rules, Routines* and *Restrictions*. Needless to say, it is a major challenge for innovation if those organisations that are in the best position to drive the process are constrained in their willingness and/or ability to do so. There were varying degrees of optimism among the respondents about the willingness of the key actors to innovate, also reflecting variability across the sector.

I think it is variable. There are some organisations being pretty forward leaning such as World Vision has been quite strategic in building up its' capability in that area. UNICEF equally globally and to a degree UNHCR and WFP.

3.2 Bringing new actors into the innovation process

While it obviously makes sense to engage the keystone players of any ecosystem in innovation because of their centrality and influence, the interviews make it evident that the *usual suspects* with their established views and ways of doing things can act as a big brake on innovation. For this reason, new players (or those at the periphery of the system) can be an important source of new ideas that can potentially disrupt the status quo. As explained elsewhere, the growing role of foundations (e.g. Gates, Ikea, Nike) has been an interesting development in terms of bypassing some of the limitations of the humanitarian establishment. There is also some interest in the sector in more open models of innovation. These work on the principle that those outside the normal boundaries of the system can be a key knowledge resource.

In open innovation what you tend to find is that the best solutions or the newest solutions tend to come from people who are not working in the field - they come from other disciplines or areas. So how do you draw people in to do what are often low-level effort things and how do you apply that to do get some new thinking and, when you have done that, how do you diffuse it.

There are, of course, challenges in shifting towards a more open model of innovation, not least because of the difficulties of working with a diverse range of stakeholders (a key characteristic of the humanitarian sector in any case).

... so picking around that stuff in terms of having open models of innovation that draw on a diverse range of actors that can plug into the private sector or research academics and how you broker those relationships, I don't know the answer but it is something that I'm keen for us to think and learn more about because there is lots happening there and I think that is a model we have to pursue.

Nevertheless, just introducing new roles or actors to the process does not guarantee that their input will be valuable. As one respondent explained, there is uncertainty in building new relationships with the private sector whether one is getting *access to the best business brains in these kinds of settings ... or just to bright young newcomers who don't really bring all that much to the table.*

In some cases, those outside the normal channels are not new players but rather *mavericks*, *entrepreneurs*, and *iconoclasts* that work in (or with) established organisations, yet manage to insulate themselves from the usual ways of doing things. Interestingly, this also applies to those from the private sector that need to challenge company norms in order to work with the humanitarian sector. One respondent recounted the example of two individuals in a mobile phone company that established an effective partnership with humanitarian agencies in the Philippines following the cyclone.

I would characterise them both as mavericks that were innovating outside the corporate norm rather than within it.

3.3 Roles and boundaries

The roles in any innovation ecosystem are not pre-given. They are the result of decisions and activities that necessarily entail the formation and reproduction, but also crossing and dissolution, of boundaries. These boundary processes are important because they shape which practices are possible, expected, and permissible, as well as those that are constrained or proscribed. As one respondent commented, *applying a role approach will often mean that people think only within the bounds of the familiar*. Good examples of this frequently mentioned by the sample respondents concerned the division between the humanitarian and development sectors, as well as those between the different clusters of activities within humanitarian aid. As one interviewee suggested, *it's a combination of humanitarian and development aid which is a very difficult thing to do because everyone wants to classify something as either or*. This process of classification has real effects because it shapes what people are able to do, but it also suggests the potential for relabeling activities which might allow the novelty needed for innovation to be introduced.

One of the interesting challenges is if we stopped marketing this as humanitarian innovation but start marketing it more as innovation to serve people who are extremely poor and vulnerable, then the market becomes much much bigger. So what is the difference between someone living in a refugee camp with poor sanitation, low life expectancy and someone living in violent slum conditions in some city in Nigeria? Probably not much. It is a bit of an artefact of the system that we label it one way or another.

However, there is still a lot of historical inertia to overcome. Another respondent commented:

They are beginning to talk about joining up humanitarian assistance with development goals. But the budget lines are separate, the departments are separate. They don't talk to each other. The humanitarian aid players are seen as the junior partners.

Although such boundaries can present real barriers to what can and cannot be done, it is still possible for them to be reshaped or overcome. This was something that the interview respondents saw as important for facilitating a more consistent and structured approach to innovation. It was also presented, perhaps optimistically, as the basis for changing the paradigm within which the sector operates:

I think the question is more about what is our business. If we say it is the process of supplying band-aids than that is fine. As an international community we are concerned to address the long-term structural causes of extreme poverty and vulnerability, we all know that band-aids aren't going to deliver that. It is more about position and programmatic shifts that are required.

Nevertheless, the constraining effect of fixed roles was a theme that came out more often from the interviews. For example, the increasing professionalisation of roles is a characteristic of the humanitarian sector that several respondents referred to.

Components of the Humanitarian Innovation Ecosystem

Before there were more people coming from ground experience ending up in procurement even though not ever having a background. These days they are becoming more professional.

One consequence of this professionalisation is that it is often accompanied by increased specialisation that can sometimes limit the ability of those occupying particular roles to see the bigger picture. According to one respondent, with reference to procurement activities:

There's a lot of shopping done by logisticians who are driven by numbers, which are short term, and which lead to illogical spending patterns from a life cycle/long term development viewpoint.

4 Relationships

It is clear from the previous section on *Roles* that the humanitarian ecosystem is complex and comprised of numerous organisations, groups, and individuals. These all have a potential role to play in innovation. However, as the interviewees emphasised, the nature of the relationships between them are also crucial in shaping the effectiveness, or otherwise, of the overall innovation process. This includes interactions both within particular organisations or groups, as well as those between them, and raises a number of challenges and opportunities in terms of working across different boundaries of knowledge, interests, and political influence. As the responses demonstrate, relationships between the different players are also critical for the creation, circulation, development, and deployment of resources central to innovation, including knowledge and ideas, finance, people, materials and technologies. This in turn is influenced by the different character of relationships, such as the extent to which they are competitive or cooperative, how far they are influenced by formal and informal rules (such as contracts, procedures, and norms; see the sections on *Rules* and *Resources*), and the duration and intensity of the relationships, whether arms-length or more interactive and collaborative. Relationships can also be a barrier to innovation, especially where the way that existing relationships are configured effectively excludes or limits the participation of certain groups, such as the private sector or local communities.

4.1 Opportunities for interaction

A key feature of effective innovation is being able to connect the right people and organisations together at the right time. This depends on the types of activities being undertaken and where in the innovation process these are happening. For example, in the early stages of innovation the emphasis is usually on identifying user needs and market opportunities and searching for new ideas and solutions to meet these needs. This can rarely be achieved within the bounds of any single organisation and so opportunities for interactions with external actors are extremely important. The interviewees spoke of a number of such opportunities, including the following:

4.1.1 Conferences, workshops, and symposia

Conferences, workshops, and symposia where different issues and approaches can be discussed and which can be a fruitful source of new ideas by bringing together different interested parties. As one respondent explained:

We did a 6 month project that finished last March, looking at what will be the characteristic of organisations that people will value in 2020 and that involved lots of conversations, and workshops in NYC, London and Johannesburg. Lots of humanitarian organisations were involved in the workshops such as the VSO, Gates, big foundations, and different government depts. Nike Foundation, etc. Although not operating in the same centre ground as DFID, some that were operating around that space.

4.1.2 Consortia

Consortia concerned with particular topics or issues within the humanitarian ecosystem. These potentially allow for the pooling of resources and sharing of ideas and good practices. One interviewee mentioned the Consortium of British Humanitarian Agencies (CBHA), established in 2010 *in response to a proposal by the UK's Department for International Development (DFID) to form a consortium to address some of the challenges facing the humanitarian system, especially*

around speed, coordination and efficiency. Another talked about a consortium involving UNHCR, UNICEF, ICFC, IFRC and others that was working towards agreeing a standard specification for a single type of tent. In this sense there are promising signs.

I can see today looking out across the sector and compared to previously that some organisations have joined forces around tackling selected issues. Pressure to do this for many years and appears to be happening ... selectively

However, another interviewee warned that *consortia can become oligopolies* made up of the usual suspects and in danger of filtering out new ideas and ways of doing things.

4.1.3 Peer-group and practitioner working groups

Peer-group and practitioner workshop groups bringing together domain experts for the purposes of knowledge exchange and coordination. This appears to be more developed in some sub-sectors of activity than others, e.g. in the area of water and sanitation. As one interviewee described it:

I also think it is quite easy to criticise those structures and in terms of operationalising or delivering they have been good and to the extent that something like in WASH there is a much stronger peer group of practitioners that meet 2 or 3 times per year and recognise each other that they didn't 15 years ago.

Others, however, did raise concerns that the sub-sector cluster approach (Clusters are groups of humanitarian organisations, both UN and non-UN, in each of the main sectors of humanitarian action for coordination purposes) could and, in some cases, have resulted in the formation of cliques which could restrict new entrants into the group. In addition, there were questions raised as to whether such silo might inhibit the cross-fertilisation of new ideas between sub-sectors.

4.1.4 Networks and platforms

Networks and platforms that allow a potentially wide and diverse group of people to participate, either through the internet or other more traditional channels. As a number of the respondents suggested, these networks may offer the opportunity for actors to become involved who are not normally able to. They may also blur or break down some of the conventional roles and boundaries that exist.

The Digital Humanitarian Network is not an organisation by nature. It is a whole new ecosystem of actors who don't seem to fit into 'recipients' or 'responders' categories.

Other examples of networks cited were Crisis Mappers, W3 Public Emergency Group, and ISCRAM. However, some respondents were keen not to overstate the role of such networks in supplanting traditional relationships. Also leveraging the possible benefits of drawing in a wider base of contributors are platforms established for the purpose of crowdsourcing. Examples offered by one interviewee included competition platforms such as *Open Ideo*, *Spiget* and *Innocentive*. However, in the case of both networks and platforms, creating the opportunity for a large pool of possible ideas is not the same as selecting from or acting upon those ideas. As one respondent suggested:

Components of the Humanitarian Innovation Ecosystem

It feels like there's a lot of potential and lots of relationships that expand boundaries, it's just that ... how does one create an environment in which they can find an outlet for their creative energies?

As well as these more discrete and/or structured opportunities for interaction, respondents spoke about a wide range of other situations where ideas could be exchanged and developed, perhaps on a more informal basis. It is evident that personal networks have an important part to play, with interviewees making extensive reference to their contacts in other organisations. Of course, these are not separate from the contexts for interaction mentioned above, which provide one basis for developing such personal connections. However, personal networks also have the capacity to work beyond the specific setting of formal meetings and potentially cut across established boundaries (as well as reinforcing those boundaries). However, these new relationships can take considerable effort to develop and maintain. This theme was particularly emphasised by suppliers seeking to gain entry to the humanitarian sector. According to one informant, *it wasn't immediately obvious who the decision makers were. No clear route to the decision maker. As a consequence, they had to work hard (over two years) to make contact with the appropriate people, and that was only after carrying out their own field trials to provide evidence for the advantages of their product.*

The interview respondents also identified situations where innovation-relevant interactions emerge as a by-product of relationships ostensibly formed for other purposes, as in the following example:

Another aspect of how existing networks work inadvertently as part of a sector wide innovation process has to do with the emergence of the regional 'hub' structure where these exist all over the world close to or inside future disaster areas and have the responsibility for maintaining and holding stocks, and ... for understanding needs and desires of impacted communities and flowing this market research back to agencies/donors and eventually to product and service suppliers.

4.2 Limits to interaction

Although the interviews provide evidence that the opportunities for involving a diverse range of stakeholders in the humanitarian innovation process have increased in recent years, the respondents nevertheless identified a number of limitations. These are mostly about the limited extent to which new or non-traditional actors are able to participate in the humanitarian innovation ecosystem as it is currently structured. As one respondent noted, *it is quite disappointing the degree to which ... we are still largely speaking to ourselves.* Two groups are singled out as particularly in danger of being excluded from the innovation process: affected populations or recipients of aid and the private sector. The lack of engagement with these two groups was identified as problematic, albeit for different reasons.

In the case of affected communities, the significance of their involvement would seem to be obvious, yet the interview sample identified a number of barriers to achieving this. As a consequence of the way the sector is organised, there are intermediaries between the point of need and those making decisions about how those needs are met. As one interviewee explained, *the decision maker has often not ever been to the field, so doesn't have the relevant*

Components of the Humanitarian Innovation Ecosystem

understanding/experience to make decisions. Another respondent was not so insistent about the need to have direct and extended contact with field operations, but nevertheless highlighted the importance of understanding local conditions.

Some say that you have to spend X amount of time in the field to understand and although I disagree with that, certainly there is a need for contextualised knowledge and one needs to understand how agencies interact with affected populations in order to innovate around product and service delivery.

The distance between affected communities and the providers of aid are also exacerbated by the dominance of larger and more international agencies which tend to have a geographical separation between headquarters, where key decisions are made, and regional operations. As one supplier suggested, this could be addressed by working with local NGOs. However, he suggested that they are *hard to contact, [with] not enough finance or information so easier to target international NGOs.* Another constraint on building relationships with recipient populations is related to the varying capacity of those groups themselves to become involved. In some cases this is possible, with indications of a growth in involvement:

Communities themselves are becoming much more active in preparedness and response [which] means that some of the things they [aid agencies] would consider as their core business is no longer, and it's a case of enabling other actors who are maybe able to provide those sort of things better.

However, the frequently vulnerable and marginalised position of recipient populations was also recognised as an important influence on their capacity to participate in shaping the innovation process by communicating their needs and how well these are met by existing products and processes.

There is a problem within the humanitarian system if we consider the affected person to be the customer, they are not the purchaser. So there is a problem with the feedback loops. Who are you going to ask is a difficult question. We are dealing with a uniquely disempowered and marginalised people - people at the furthest edge of existence who have the least power or agency, so how you engage with them to understand what their needs are is a really difficult process.

Another group of actors that have faced limitations in terms of building relationships with the humanitarian sector have been private sector companies. Respondents identified the private sector as a potentially important source of innovations and suggested that there was scope to extend such relationships. However, as explained in more detail in the section on *Rules*, there are significant barriers to involving the private sector, both in terms of procurement regulations and accountability, as well as entrenched views about the dangers of working with private firms. As one respondent argued, *there is a sort of ideological reticence to engage with the private sector by many individuals in agencies in the humanitarian sector.* Even where such reticence has been overcome, there are other challenges relating to the problems often experienced by companies in navigating their way through the humanitarian system. According to one interviewee, *disorganisation and bureaucracy of humanitarian agencies ... these are a barrier*

from the private sector side toward engagement. Another respondent argued that the nature of the relationships between the private and humanitarian sectors limits innovation.

... the humanitarians and the private sector don't know how to talk to each other, and this limits the scope of innovation to quite obvious transactional things.

4.3 Collaboration and competition in relationships

A strong message from the majority of respondents was the need for greater collaboration between actors in the humanitarian sector, as typified by the following comment, *innovation in the humanitarian world depends on collaboration and alliances.* However, this is not always evident and the competition between aid agencies and the fragmentation of roles were seen as dysfunctional and an unnecessary waste of resources. As outlined above, there have been some instances where inter-organisational collaborations have developed, resulting in greater streamlining and consistency in products and procedures. However, the interviews also revealed a persistent tendency for competition between organisations, even if operations in the field are usually characterised by collaboration as a necessary condition for getting things done.

I think it is a truism that in the field you see quite a lot of collaboration but as you get higher up the chain it becomes more competitive because the stakes are much higher and people tend to be physically safer - compare working in a village where staff of different agencies share problems to someone sitting in Rome and another in Geneva.

Collaborations and more sustained and involved relationships were also seen as important in allowing innovations to be developed and scaled up. Without these kinds of interactions it is difficult for specialist knowledge to be integrated, for the co-development of ideas, and for the combining of complementary capabilities. This comes across strongly in the following example:

One of the things that became acutely obvious in the Philippines was that the mobile operators had the backup equipment that had been prepositioned to be used in times of crisis to help accelerate the restoration of the network but didn't have the logistics and expertise that the humanitarian organisations had access to. How can we join these together? Cooperation.

Having said that, it appears that the experience of suppliers is not always so collaborative. The following was a typical response: *trying to get closer, work on partnership basis but they tend to keep you at arms length.*

5 Rules

The interviewees were asked a series of questions about the rules shaping the humanitarian innovation ecosystem. A broad definition of rules was adopted, covering both more formal governance mechanisms, such as procedures, specifications, standards, regulations, contracts, and incentive systems, as well as more informal influences, such as beliefs, norms, motivations, and expectations which are themselves important for how the former are interpreted and applied. Rules are obviously significant for structuring the innovation process, guiding the allocation of resources, defining roles, and shaping relationships. The main message from the interviews was that the combination of formal and informal rules currently operating within the humanitarian aid sector do more to constrain rather than enable innovation. Where innovations do take place these are often in spite of the rules rather than because of them. This is characterised by the role of mavericks and entrepreneurs who are willing and able to work partly outside the normal rules.

5.1 Rules, risk, and accountability

A key feature of the humanitarian aid sector is the overwhelming influence of accountability on the majority of activities. This is because of the dominant funding structure where it is crucial to demonstrate that money from donors has been used appropriately.

The international organisations have one big constraint they share in common that universally constrains innovation. Because they all rely on donor/public money not only do they face heavy reporting requirements but the way they interact with others - especially those who they contract to provide goods and services. It all has to be very transparent. They are scared of being seen to get too close to any external actors - especially private sector players.

Of course, accountability is a more than worthy goal. It is also a crucial condition for establishing trust with donor groups. However, most of the respondents agreed that it had now been taken to an excessive level.

Accountability is worthwhile, innovative in the HA sector context, but now it has become institutionalised - fits into boxes, fit for purpose, evidence base, value for money, etc., etc., what was very worthwhile and noble in its intent, became, like so much in the humanitarian sector, it has become institutionalised, professionalised.

The result has been an emphasis on compliance and a high aversion to risk, which are completely understandable in the light of the conditions faced by the sector.

Humanitarian outcomes are more often than not sub-optimal, but cannot afford loss of life in innovating

Front-loaded controls and zero risk tolerance of the donor agencies, there's no fluency in risk or failure.

Components of the Humanitarian Innovation Ecosystem

A lot of NGO staff are stuck in this inane bureaucracy where all the controls are front loaded and their incentives and reporting and compliance mechanisms all play to centralised command and control structure because of anti-terror and because of low fraud tolerance.

There is a paradox here because avoiding risks for the fear of causing harm to affected populations can potentially lead to greater problems overall.

Risk is an interesting one as I do not think the system has particularly sophisticated models for dealing with risk and in many ways are risk adverse which has created an inhibitor for innovation. People say you can't do this because you don't know what will happen but they are quite happy to continue with programming that they know are substandard and ineffectual but they know that with something that has the potential to transform the situation but has a slightly higher risk and how you manage those risks so that the risk is not transferred onto the beneficiary population is something that agencies are not very good at.

An outcome of the focus on accountability and the way that risks are managed, according to the interview respondents, is that where innovation occurs it is more likely to be of an incremental rather than radical nature.

The ways of tackling problems that engender new approaches can be transformational or incremental. The humanitarian world probably encourages the latter because of the nature of work and risk to life.

It is worth noting that the interview sample generally did not appear to include more incremental changes under the heading of innovation. As such, the question of how far the current system allows incremental innovations was not considered to any great extent, even though such more modest adaptations can be extremely significant over time.

5.2 Rules, interests, and intentions

While some rules are introduced for good intentions, there are others that the respondents felt end up protecting particular interests, whether intentionally or otherwise. One interview respondent gave the following example:

US food aid ... requires buying the food from American farmers and use American shipping companies. There are a lot of negative rules ... I think this inhibits innovation but it also inhibits day-to-day programming as well.

The interviewees also described a number of instances where the existing rules worked against professed intentions, such as involving local populations and businesses more extensively.

I think that many of the donors are schizophrenic. On one hand they argue for the reinforcement of local capacity on the other hand different departments in the same institution will create the control systems that prevent that local capacity from being built.

Components of the Humanitarian Innovation Ecosystem

Procurement methodology is heavily weighted towards organisations who are able to meet framework agreements which require them to hold stock at the manufacturers' cost for aid agencies to call down as and when they need it. This means they have to have a balance sheet that can support the creation and holding of that stock, dictating they have to be a certain size. There are not many East African companies that can afford to hold 10,000 blankets.

The interview sample made a number of comments about the restrictive effects of procurement regulations on suppliers, which is likely to reduce the capacity for innovation, if only because of the consequential limitation of resources.

They force the cost on the producers. They only pay for the goods when they call for them. For example, in order to make a tarpaulin you need to buy granules of HCP. A new company has to pay in advance. It then takes 30 days to be shipped. Then they have to manufacture. The UNHCR will pay him in 90 days (if lucky). This means the producer has to bear 150 days credit on these goods.

5.3 The power of informal rules

Why formal rules appear to operate contrary to expressed intentions is an interesting question. If the existing rules are acknowledged as being counter-productive, then it might be expected that efforts would be made to change them. Needless to say, this is not as straightforward as it sounds. It is clear from the interviews that there are a number of competing agendas at work that are not necessarily explicit but which nonetheless play an important role in how the innovation ecosystem operates.

The institutional culture of the humanitarian delivery community is absolutely unwilling and incapable of reviewing and revising their standard operating procedures. They don't have a mentality of constantly challenging today's truth - there is no Galilean mentality, there is not internal constructive scepticism.

There is a humanitarian exceptionalism where people who work in the field say that it is different because it is humanitarianism. Sometimes there is a gain of truth in that but sometime I think it is a defence thing and when thinking about innovation is one of those areas.

When ideas and beliefs become deeply embedded and institutionalised they are difficult to change, especially when they are taken for granted and not subject to scrutiny.

I think the rules are more about conventions around how people ought to be doing what, and that is division of labour, and I think those rules are quite deep.

It is still possible to change these conventions, but there needs to be a willingness to test assumptions, as one interviewee suggested.

Components of the Humanitarian Innovation Ecosystem

There is a common 'truism' that exists and I wonder whether it is because everybody says it that it becomes true - the narrative goes, donors don't like any risks, so we won't take any risks. We will give them what we have always given them because that is all they will fund. It would be interesting to test out how true that is.

5.4 Rules and incentives

An important subset of rules in the humanitarian innovation ecosystem relates to incentives and other motivations that drive different actors to pursue particular goals. At a fundamental level this raises some big questions about the political economy of innovation in the sector and especially the extent to which markets can be created to encourage innovative activities. Not surprisingly, opinions differed quite significantly among the respondents about the kinds of incentive system that are appropriate for the humanitarian aid sector. For some, the specific character of the sector means that markets do not operate in the same way as in the commercial economy and there are limits to how far the same mechanisms are feasible or appropriate. There is an understandable reticence, for example, to be seen to be making profit from the suffering of other people. It also needs to be recognised that profit, whilst a powerful motivation, is not the only driver of innovation, and may indeed push things in the opposite direction.

It kind of avoids the fact that some people do it just because they are good people. They don't do it for the money. So in some cases monetisation is also the wrong framing of that. What you might find as well is that if you try and monetise it people will just not get involved and walk away. So even applying monetising or marketisation to some of these phenomena will kill it.

However, there is clear interest from many respondents in the potential of using more competitive market principles.

We need to be comfortable in working with the private sector when they can add value and it should be based upon their making money in order to get a long term commitment - not just relying upon them to do it because they think it is a nice idea and a good thing to be doing. Profit is a really clear incentive.

Innovation is spurred by commercial needs.

Ultimately whether or not such incentive systems are workable and effective in the humanitarian context is still quite an open question given that a common theme from the interviews concerned their relatively limited spread.

This is the way the market mechanism works. Fair enough ... but the donors and agencies just fail to play this game to the benefit of poor people game either because they are naïve, complacent or complicit.

There are gatekeepers who are incentivised by health and ideological issues rather than speed, sustainability, economic development potential.

Components of the Humanitarian Innovation Ecosystem

For one respondent the shift towards a more competitively driven system would require a radical reallocation of resources.

Take money away from the charities and instead deliberately set out to use their resources to encourage/incentivise the private sector to think creatively and long term about breakthrough innovations (of any kind - technology, distribution, process, accountability, etc.) to address humanitarian aid needs and allow them, the companies, to make a decent profit ... but the incentives and moral superiority attitudes are all oriented in the wrong direction.

Despite the emphasis on social and moral values guiding the humanitarian effort, it is evident that money plays an unavoidable role.

The majority of people, departments systems etc. in humanitarian NGOs are orientated towards where the money comes from and serving those incentives.

This highlights a central concern about how to create the right incentives to encourage innovation. As the following quote suggests, this is mostly likely to be about combining a range of approaches that play to alternative motivations.

The question is how do we together incentivise collaboration. And I think that this is something around organisational culture and permission, and then the hard funding questions as well. Saying the only way you are going to get the sweeties is by playing together nicely.

6 Routines

This section summarises the responses of the interviewees on the theme of routines that either support or inhibit innovation. Routines are patterns of activity and behaviour that form the detailed building blocks of the innovation ecosystem. As with rules, they can be more or less formalised. However, a common refrain from the interviews was the need for more systematic and explicit routines for innovation, suggesting a preference for formal rather than informal routines. Nevertheless, the contribution of informal routines should not be underestimated. Routines can themselves also be the target of innovation. As one respondent put it, *a lot of innovation is actually behaviour change*.

6.1 Routines and innovation activities

The interviewees discussed different activities that comprise the various elements or stages of the innovation process, reflecting on how well developed routines are in these areas.

6.1.1 Identifying needs and opportunities

Identifying a need or recognising an opportunity are often the starting point for the innovation process. Respondents pointed to some examples of effective routines for determining and responding to the needs of affected communities, as in the following case of the activities of a large foundation:

... in the Ethiopian camp which has 200 000 refugees there is a constant dialogue with the refugees to find out what they would they want, what they think about different solutions, how we can improve everything in the camps from the layout to the actual shelters to how to create communities. We have specialist organisations, anthropologists for example, working in the camps to help us understand what the refugees like and don't like and ensure that whatever we do is aligned with their interests and that money is spent in the right place.

However, as discussed elsewhere, there was a more general feeling that identifying user needs is not a particularly well organised activity and may be quite limited in many cases.

6.1.2 Ideation and knowledge search

Coming up with new ideas with potential for development is an important aspect of innovation, often taking place through interactions with the wider knowledge base. As such, it is important to be aware of developments that may ultimately generate innovations. One interviewee highlighted the significance of such exploratory routines by suggesting *that innovation needs a horizon scanning element, which probably needs to be shared*. For others, the emphasis of the sector on operational activities means that there is not the physical or cognitive space for encouraging new idea formation. As one respondent argued, it is important to create such spaces because *most organisations are not configured physically or psychologically for this approach*. This view was echoed by another interviewee:

I think what is needed is a system that encourages and facilitates good ideas. To be actively seeking out the problems finding solutions. Solutions are found from an open minded approach.

6.1.3 Knowledge integration

Developing ideas and searching for new knowledge are important, but this knowledge needs to be integrated into existing routines in order to have an effect, often requiring the combination of different specialist domains and functional areas. The interviewees largely agreed that routines for integrating knowledge in the humanitarian sector are variable across the different sub-sectors of activity. Water and sanitation was identified as one cluster where processes for integrating specialist knowledge are quite well developed.

... you can see a systematic linking within the sector, private actors, specialist academics, etc., working within that field.

The medical sub-sector was given as another example.

I think that medical practitioners have a specific background engrained in them historically - R&D, bringing in new products, adapting existing products, surgery techniques, etc. not just in poor countries but in areas where there are wars and conflicts which brings a whole other set of issues

6.1.4 Solution development and testing

Developing solutions for particular needs can be an extended and highly iterative process as concepts are taken from the ideas stage into reality. This was especially recognised by the suppliers in the sample. According to one, they are:

... continually beavering away to improve things, faster process, better quality [through] R&D funded by mother company ... over next 6 months [we] will be speeding up kilns ... [we] also do a lot of discovery work with others on new materials.

A crucial element of solution development is testing, providing proof of concept and showing the benefits and workability of the innovation. Respondents identified many barriers in this respect, suggesting weakly developed routines for testing.

Piloting is not part of the general vocabulary in the sector. Everyone wants tried and tested and doesn't want to risk failure in the field.

The problem I see with the large donor agencies is getting the project tested on the ground. Unless the need is explicitly demonstrated, the agencies won't go for it. But there is no structure in place to facilitate its trialling. This product succeeded because the producers took it to the ground themselves and demonstrated its potential at a grassroots level.

This seemed to be a widespread issue, with suppliers taking the initiative to pilot their own products in the field.

6.1.5 Scaling-up and diffusion

The sample respondents identified routines for helping to diffuse and take innovations to scale, but again there was the sense that the process could be more systematic.

Components of the Humanitarian Innovation Ecosystem

It doesn't have to be that way but requires diffusion mechanisms to allow people to find it really quickly. Without having it forced upon them. That is where prizes, challenges, award ceremonies is really important because they are mechanisms which are not apparently about what you think it is.

According to another interviewee, there is a need *to spread the stuff we do have, ensuring adoption is more consistent and even and systematic.*

6.2 Routines as constraints

It should be clear from other sections of this summary that the sample perceived innovation in the humanitarian aid sector to be limited by a number of constraints. In many cases these are about overcoming established routines, especially where these are excessively complicated and over-bureaucratic.

Existing systems are too complicated, bureaucratic, decision making chains are too long. A lot of innovation is being killed off because of the difficulties getting through.

Because agencies depend on what they did in the past, but rather continuing to get stuff from the north and channelling it effectively to beneficiaries ... don't want to do it differently.

One respondent made a rather different point about the stability offered by established routines. This may make innovation more challenging, but they do offer a degree of certainty.

It is slightly scripted - if X happens then we will call A, B, and C and they will respond in a particular way. So it is more about protocols being accepted as the norm. Which in some ways is really good. If I got run over by a car I would want there to be a really established protocol in my local A&E dept. to be clear that there will be a process of triage and if certain conditions are met then these are the people they will call, etc. In a sense you need a lot of procedures for a certain kind of response. But how do you get to test the protocols and are they sufficiently open?

However, there is still the overwhelming impression that the routinisation of delivery in the sector has become something of an excuse for avoiding innovation, whether planned or emergent, radical or incremental.

7 Results

The *results* category largely focuses on the extent to which innovations are being introduced into the humanitarian aid sector and the degree to which they are evaluated prior to introduction or scaling-up, and assessed as to their subsequent impact. Unfortunately, there was a relatively low number of usable responses to the questions indicate, and this (evaluations and assessment in particular) appears to be a topic which has not been at the forefront of consideration within the sector.

7.1 Extent of innovative activity

It might simply be that, up until now, there just has not been the awareness (or indeed the number of innovations) appearing in the field for there to be much focus on impact and evaluation. While the interviews were full of references to high profile examples of *radical* or *transformational* innovations that have been introduced into the sector in recent years (these include repeated mentions of CMAM, cash replacing direct food-aid, the use of mobile smart phones to distribute credit, and nutrition bars, etc.), it is generally recognised that these are the exception rather than the rule. As one senior manager in a donor organisation mentioned:

I think we have seen a couple of innovations that are quite inspiring but it is also quite depressing how few of those there have been.

A number of interviewees reported that there is insufficient interest on the part of donors to prioritise innovation, preferring as one respondent claimed, to be only interested in funding things that are tried and tested (by which he was clearly referring to those technologies or practices which have been around for a long time). NGO's, even some that might be interested in partnering in the development and introduction of innovations, suggest that their status as charities means that *doing triumphs over thinking* in order to satisfy public perception and ensure the survival of the organisation.

Interviewees suggested that the humanitarian aid sector is crisis driven, that one cannot (indeed should not) be taking risks, as they are risks with people's lives. (Interestingly few, if any, of our sample professed to holding those views although nearly all prescribed them to others working in the sector.) And this view is seen as being so deeply rooted that some aid agencies were described as being so risk adverse as to be willing to continue with poorly run programmes or discredited solutions simply because of a lack of incentive to innovate. Alternatively, it might also be attributed to what has been described as the insularity in the sector with different donors and agencies having built their *brand*. As one interview rather cynically described it:

This is not about innovation, it is about the structure of how humanitarianism is defined. In the context of the global transformations the response will be that, yeah we got to be more innovative but there is a sense that the institution knows what it needs to know and it doesn't need to listen.

Described in another way by two of the manufacturers in our sample:

Components of the Humanitarian Innovation Ecosystem

Agencies do not come to them with requests for new products, new whistles ... hardly ever any changes to specifications or products. There is very little feedback on changing product innovations.

We had a request to develop transitional shelters. We were given certain criteria to meet on the performance side but no information at all on how these criteria were reached ... didn't understand what part of the shelter experience the criteria emerged from or nature [of the] problem being solved. So we responded at arms length and are waiting ... perhaps this indicates there is a system of sorts in place but its not optimised to produce results that matter to those on the ground.

Various other interviewees lamented that there were so few innovations in the field, but upon subsequent questioning it also became clear that their definition of innovation was restricted to *radical* or *transformational* innovations. Incremental improvements were not seen in the same light but more as a continuing of an idea (such as improvements to mosquito netting) described as *perfecting an idea*. This misunderstanding of what is, or is not, an innovation, and how much of it actually does go on may well be contributing to a lack of the necessary commitment to innovation evaluation or the role that it can play in subsequent investment decisions (such as is required for up-scaling).

7.2 Lack of necessary skills

Whether it is due to the perception of humanitarian aid being a relatively non-innovative sector, or any of the other reasons given above and elaborated on in the *Restrictions* section of this summary report, the view of some of our respondents is that having more regular and comprehensive assessment and evaluations are long overdue. As one interviewee put it:

The near complete absence for decades of any serious, systematic attempts at comparative market research among beneficiaries about their views on different aid products and the performance of different agencies is an absolute scandal. The professionals in the sector who all know about this characteristic of the humanitarian aid should be ashamed.

Recognising that it should be done and having the ability to do it are, however, two different things and it certainly seems to be the case that there is a shortage of the skills and competency required in order to conduct rigorous evaluations of new practices or technologies. According to the head of an R&D fund:

We are in a system that is not very good at building evidence, it is not very good at developing policy based upon evidence and it is not very good at making operational decisions based upon evidence. There is a whole issue around the system not being technically capacitated to measure what it does which affects a lot of its core programming and effects R&D. Someone might have a good idea but most organisations just don't have the knowledge and capacity to test it, and measure it, and say it is a good thing.

Components of the Humanitarian Innovation Ecosystem

He continued along these lines but also suggested that there were opportunities for partnering with actors outside the traditional agencies as a means, at least in the short term, of accessing the necessary skills.

Someone might have a good idea but most organisation just do not have the knowledge and capacity to test it, and measure it, and say it is a good thing. But that is a problem that can be alleviated slightly by brokering, and allowing access to academic support, or finance to get evaluations done.

7.3 Linking innovation, evidence and policy

As we have seen in the nascent literature on humanitarian innovation (see literature review from WP1) there is a growing recognition of the importance of innovation if only to be able to deal with the sheer number of adversely affected populations.

One interviewee noted that:

One of the things we found, particularly coming out of the Philippines experience, was that [there] is quite a demand/desire from humanitarian agencies to be seen to be implementing innovative solutions to things that would rely more heavily on data, mobile technology, social media, because of the connotations to be doing new and innovative work that they could demonstrate back to the donors.

Certainly there has been interest in the sector, in an almost faddish way, in technologies such as big data, mobile platforms, and social media. This has grown to such an extent that one commentator in our sample dismissed them as *high-tech gloss* and another as believing that if she were to attend one more seminar on the use of mobile technology or big data she would start to scream! Her more relevant point actually being that all the applications, while interesting and no doubt useful, were all slightly different and there were no evaluations to guide decision-makers as to which to invest in.

But there is also a serious discussion that seems to have begun about the importance of taking a strategic approach to innovation by integrating evaluation and policy-making. As one senior manager in a large donor organisation described:

And that is what we have done with CASH, reviewed the evidence and found that in many circumstances, not all but many, cash is at least as good an option as food aid and it is now a requirement that all business cases if they are proposing to use in-kind food provision must make the case very clearly that they have considered the options (CASH) and this is why we are not going to do that. That is why the evidence base is so important. With the CMAM, you had a really strong evidence base and a process for moderating that evidence and basically endorse one approach over another. That is what it takes. We need a moderated system of lets find the evidence, engaging with it and then taking that into internal policy and guidance and that's what we are trying to build.

However, caution has also been expressed:

We need to be quite careful as donors in terms of how we position ourselves in that we do not set ourselves up as being technical experts, although I hope we have technical expertise. We try and play that critical friends role in terms of expertise. But I do think we should have a responsibility to make sure that the innovations that we are funding are the most effective and constitute the best value for money. If we take that responsibility very seriously then we also have the responsibility of integrating the existing evidence ourselves and form a judgment.

7.4 Lessons from other sectors

Several participants in our sample also referred to lessons that could be learned from other sectors, in particular from international development or from the military. One interviewee drew our attention to the UN agency (IFAD) focusing on innovation in agricultural development assistance. IFAD requires all project managers to actually measure or purport to measure the degree of innovation in every project. This approach is one of measurement by performance and is clearly an attempt to embed innovation into the culture of the organisation which includes incentives to think through how innovation can be directly linked to operation and to policy.

They produce policy documents (including on innovation) and engage the top people in to help articulate them. This is mission critical for them and helps them to 'up their game'. The policy document is then agreed and each manager in each domain has to look at it and write down what they are going to do to implement it and set goals. So it is translated into short and medium term goals and there is accountability there.

Another example from the development community was mentioned by one of the private sector manufacturers in our sample who referred to a coalition of private sector companies that worked with a UN agency (the UNDP) to try and align the priorities that were going to be for investment and regeneration in order prevent the duplicating of efforts.

In a slightly different way, an interesting example from the military sector was reported. A ten-year programme (URBEX) for the UK Ministry of Defence has developed a process which has been described as an *applied research project*.

A tender document that frames the top three or four field problems, as identified by the military, was published and distributed widely. The tender document included the required time-line for completion, technical specifications, and any other important parameters that need to be addressed. Problems might include finding missing people, the provision of clean water under certain environmental conditions, etc. Scenarios for the use of the required equipment, etc., are constructed by trial organisations that are contracted by the military to listen to their field experts. The suppliers' piece of kit is then subjected to normal and extreme usage within the scenario overseen by the trial teams. The trial team then got together with the military guys and quickly (within a week or two) produce various kinds of detailed feedback reports that were sent back to suppliers. The suppliers were then invited to go away and make any changes needed and to resubmit their proposed solutions. The level of engagement

Components of the Humanitarian Innovation Ecosystem

was gradually stepped up through stages culminating in field trials, during which time potential candidate suppliers and the relevant military guys got to know each other better, making it easy at the end to develop quickly a sound, commercial deal that reflected what everyone wanted.

The interviewee, who was formerly in the military but now runs a small private company that provides equipment to the humanitarian aid sector felt that:

The process has much to offer to the humanitarian aid sector as a means of providing real opportunities for suppliers to get to know the landscape they are pitching into, letting the private sector understand what the customers priorities are, and who to talk.

In his opinion this lack of real engagement was the biggest single weakness in the private sector/humanitarian aid relationship, a sentiment that had also been reflected in the view previously expressed by the manufacturer of shelters quoted earlier.

8 Restrictions

When asked about those factors which tended to inhibit innovation our sample provided more observations than were generated in any other category, and a lot of ground was covered. We have grouped the responses into a number of overlapping sub-categories including mind-sets and organisational culture, structural issues, financial procedures, aversion to risk, skills and competencies, identification of needs, and the private sector.

8.1 Mind-sets, mental models, and organisational culture

It has become something of a given that questions relating to the slow rate of innovation and diffusion of new ideas will receive answers pointing to the core business of the sector. Saving lives and providing relief from emergency situations are perceived as, or used to justify, a constraining factor on innovation. Typical of the comments received include:

There is no R & D spirit in the humanitarian sector - it is all about getting the job done.

There is too much orientation towards crisis response by both donors and organisations. And within crisis response, too much focus on 'doing things they way we did last time'.

Both the donor community and the public are fixed on short-termism; there is no time and possibly a moral barrier to experiment in the heat of the moment.

Individual mind-sets and mental models tend to overlap with organisational and managerial cultures and the sector is seen as immersed in culture that *stifles the innovation process*. Several respondents place the blame on the prevailing *business models* which date back anywhere from decades to centuries.

Those of us in the centre who have a mandate for thinking about the sector are aware of the importance of innovation. But the sector is very conservative - twenty years in a business model has created mind-sets that may not understand deal-flow, return on investment, or ecosystems.

We see a real existential problem which is that our business model is old fashioned and Victorian, reactive and it doesn't give us any adaptive capacity.

The due diligence for innovation is grounded in today's best practices, we are constrained by existing mental models.

Typically, the way in which such models manifest themselves are highly bureaucratic processes, and a refined sense of aversion to risk (see below). Humanitarian aid agencies were accused of being insular and several respondents complained of the adverse consequences of this mind-set:

I have thought hard about this and concluded that maybe in part it is just the inherent dysfunctional fragmentation of the sector at work once again - the whole 'not

Components of the Humanitarian Innovation Ecosystem

invented here' view. Competition in humanitarian work is silly, but agencies can't help doing it. I chair the (name removed to preserve anonymity), which is a good, credible organisation, but they do operate in a silo, they focus so hard on what they do that they cannot see beyond it. Research is not being used well by the sector. It is tied into the existing practices mentality, research is geared to each organisation's own sliver, own agenda. 75% of all humanitarian research is non-essential; it's an internal expert market with the convinced speaking to the convinced.

We value independence over interdependence. Interdependence can be the driver of innovation, sucking in the private sector, academia and sources of finance.

Interaction and sharing should not be, but often is, shackled due to organisational self-interest.

As a consequence, innovation is not promoted nor incentives established. Innovation is seen as the preserve of the policy unit and not something that all can be involved in. Responses from within the sector that reflect this included:

It seems that no one is promoted, congratulated, etc., for being innovative.

We tend to treat innovation as an activity to be outsourced, rather than an organic process.

And several from private suppliers that are, perhaps, even more damning:

They often have knee-jerk reactions to new innovations - i.e. 'You need chemicals.' Persuaded that they know already. Think that they've seen everything. Just do what they are used to do.

But we seem to be struggling against prejudice, arrogance and 'not invented here' syndrome to persuade sector of our product's potential.

The big one is around the culture of failure and risk. When it comes to organisations investing in innovation and change, there isn't the systems within organisations to support individuals and teams ... they take it upon their shoulders personally and, as there are no systems within organisations to support them in doing that, this is a huge disincentive. For your career progression it makes a lot more sense to keep ones head down and do a good job than to take that risk. Organisations have become increasingly bureaucratic and ossified. You have these layers and layers of compliance to go through and it is just a huge disincentive.

So difficult to even organise a meeting. They are not even curious, even in the face of evidence.

Some interviewees did note that attitudes were changing, albeit slowly. But even amongst those that perceived changing mind-sets, there was a degree of scepticism.

Innovation has become a bit of a buzzword but there is very little of substance and little that is new going on under the heading.

8.2 Structural constraints

While interviewees consistently pointed to mind-sets, prevailing mental models and organisational culture as major inhibiting facts, they also referred to a range of structural issues and systemic problems that they felt needed addressing.

There is no hub for idea or technology exchange.

The international organisations have one big constraint they share in common that universally constrains innovation. Because they all rely on public money not only do they face heavy reporting requirements but restrain the way they interact with others - especially those who they contract to provide goods and service. It is, for example, easier for donors to manage a smaller number of large grants than a large number of small grants ... this works against innovation as larger players more bureaucratic and with a vested interest in status quo way of doing things.

... low fraud tolerance. It seems that people can't change the frameworks in which they work. They can't and they won't change the rules.

8.3 Financial procedures

An important aspect of the inhibiting nature (at least in terms of innovation) within the sector are the funding models of donors and agencies which were seen by our respondents are largely designed for delivery and not for innovation.

Despite glimmers of a system of innovation, the sector is still a prisoner of its funding structure and political history. It is very competitive at all levels between donors, agencies, suppliers. All are focused on securing access to more funds and not necessarily producing better ways of doing things called for by the voices or demands of the end-user market. It is lip service to the higher ideals of co-ordination, co-operation, etc.

For some, the problem was a top-down/bottom-up problem:

The guys on the field wanted the project, the block was at the top and to do with finance.

You still hear the refrain from agencies that they are limited to what they can do and innovate because of donor expectations and the limits that that involves in a live crisis environment.

For others, it related to public accountability:

Components of the Humanitarian Innovation Ecosystem

They are scared of getting too close to a potential buyer or working too closely with manufacturers. Afraid of being accused of corruption. They have rules and regulations whose purpose and origin are unclear.

Not surprisingly, given the nature of humanitarian work and the fact that the overwhelming majority of the resources come from the public or the public sector, the concern about accountability is high. But, as in any sector in which large sums of money are involved and the need to act rapidly in crisis situations, there are also suggestions of inappropriate or illegal activity. As three interviewees noted:

There is a lot of bureaucracy; a lot of underhand business goes on.

There is plenty of evidence of backhanding and product and suppliers being chosen without due process and decisions taken in a non-rigorous fashion.

There is a dark-side to this business.

For yet others, it was simple question of politics:

Funding comes through the donors to a central pool and it is as much about power and the distribution of funding as it is about programme quality.

They like to invest in a specific cause, often in line with their own interests.

But for many it was a combination of short-termism, attitudes toward risk (see below), and the form of accountancy procedures that have, over time, been developed to reflect these concerns.

It is the way that the humanitarian sector is built. When I met this guy from a UN agency who is in charge of innovation, he described his organisation and said that he couldn't find a penny in the UN, he found money from private foundations. If he cannot find money within the humanitarian sector, it would be impossible for me.

But, in fact they cannot obtain money for that (a particular innovation that a company was working on) because there is no way for them to pay for development of an innovation. They don't have the accounts for this.

Tendency to spend money in large chunks therefore necessitating larger intermediaries, less flexibility much more ability to place pressure on cost reduction at the expense of flexibility and innovation.

For example, there's no R&D funding in NGO's, not even small scale R&D funding for kernels of ideas to be tested or explored.

As with any sector however, it is not homogenised and one might be expected to find differences between sub-sectors:

Particular clusters don't encourage their members to collaborate on R&D and they may be focused upon people getting their share of the pie.

8.4 Aversion to risk

Clearly the nature of the work of the humanitarian sector has led to mind-sets that are not conducive to innovation. This is reinforced by the structure and financial procedures adopted, with a dominance of large donors and strict accountancy procedures, many of which are designed to assure public accountability. Although not all respondents bought into this scenario - some pointing to the fact that the majority of money spent in the sector goes towards chronic or recurring problems and that, for example, those more recently established refugee camps are not much different from those that have been in operation for over ten years. This suggests that there were significant opportunities to learn in the recovery phase and for the next event. However, in spite of such views, it certainly seems as if short-termism and risk aversion are deeply rooted and reinforced by the sectors financial arrangements.

The humanitarian sector is actually risk-averse because it can't be seen to be failing or risking beneficiary outcomes.

There is a barrier in that a lot of the things that will come from an innovation process will not actually work and be quite costly to trial or develop. The current donors and funders approach is from a low-risk perspective which is one of the challenges to innovation.

But for some it also related to how risk were assessed and a lack of incentive to change:

What can innovation really do in the humanitarian context? We are risk-averse, turf-paralysed, unwilling and unable to do anything truly new, locked into our comfort zones because we have been too easily bankrolled for far too long. We don't need to innovate to survive and that is at the heart of why innovation is so hard.

8.5 Identification of needs and solutions

It is generally accepted that innovation for innovation's sake does not necessarily add value within any organisation or sector and that innovation must follow the identification of a problem that needs to be solved. The literature on innovation management suggests that engagement with users is an essential aspect underlying successful innovation – and not merely a moral imperative. This is not, however, an easy thing to accomplish and certainly something which the humanitarian aid sector has been sensitive to for many years. Some respondents simply reflected that *consumer end-users are largely shut out* or that *consumer rarely allowed the possibility to express their need*. This is not to imply that interviewees were not interested in more in-depth interaction within the innovation process but were at a loss as how to achieve effective involvement. (Concern about engagement with affected populations is also discussed under *relationships*)

As one private company designer lamented:

Components of the Humanitarian Innovation Ecosystem

Usually when I talk to NGOs for the first time they say okay that they will put me together with their operational directors. But that isn't enough - he is just some guy in their headquarters. There are too many filters between him and those in need.

While recognising the difficulties constraining the identification of needs (and solutions) via more direct participation amongst effected groups, other interviewees also harped back to both the structural issues and nature of the sector's core business. It was suggested that the greatest constraint to innovation is a historical holdover of the humanitarian aid sectors systemic structure that emphasises quick response using tried and tested solutions.

Solutions, whether food aid, shelter, etc., are produced elsewhere and flown in - or stockpiled and then trucked in. This leaves little room for homegrown innovation.

And, for some the both needs and solution identification was constrained by political considerations.

I think that a lot of aid programming are not based upon the individual needs of people, the distribution of food in emergencies is as much driven by what donors want to give as what people need or would help them most.

The distribution of food aid from the US has been a huge blockage - which has inhibited the spread of cash programme and probably inhibited people from trying new things - monitorised food aid based upon what donors want to give has been a huge blockage to innovation. I am not talking about specialised nutrition programmes but daily basket of calories that people are provided with which has inhibited the spread of cash programming inhibited the ability of agencies to try new things as well.

There are a lot of negative rules and there is a lot of stuff around terror-based legislation. There is a zero tolerance around terrorism but that is pretty meaningless if you are going to be programming in somewhere like Somalia because you will necessarily have some things you are doing syphoned off. I think this inhibits innovation but it also inhibits day-to-day programming as well.

8.6 Skills and competencies

Of course, effective and efficient innovation management, of which the identification of need and the search for appropriate solutions are only part of the equation, also require a range of competencies. While some of the sample were encouraged by a perceived awareness as to the need for innovation within the sector, many were less convinced that there were the necessary skills within the sector or an understanding of what is required to manage innovation successfully (and repeatedly). Interviewees made reference to many different types of competencies in short supply or process gaps that seemed to be missing. These included:

We are poor at managing knowledge; this means we don't see opportunities for innovation.

Components of the Humanitarian Innovation Ecosystem

Donors are not willing to fund innovation and have little understanding of its process. There are some tech savvy staff but relatively few and far between.

The procedures the aid agencies have to follow require a bit of 'hand holding'. The decision maker has often not ever been to the field, so doesn't have relevant understanding or experience to make decisions. Needs to be goaded to get products tested and evidenced.

But it is potentially a problem for the clusters; particularly for some of the new technology opportunities- crowdsourcing, digital - because they, some of the clusters, do not have that sort of expertise and it is difficult to get in.

Others talked about the need for a variety of inputs, not just those with technical skills but also from the social sciences, such as anthropologists, in order to gain an understanding of the variables which might constrain scaling-up. Ultimately the success of a new idea will depend upon utilisation on a large scale and scaling-up requires an entirely different range of skills from those needed at earlier stages of the innovation process.

The big problem is the up scaling of the benefits of innovation. The challenge is monumental. The barrier is that it takes so much work, luck and the right capability.

And for some this was a combination of both a lack of skills and a lack of time.

NGOs won't put in money because they want to see something first and designers needs some investment with no guarantees. It is difficult to work with NGOs because they always have something else to do. We have to find a way to put them on contract in order to get them to participate. We have to be able to say to them that we have designers and the money but we need you to participate.

They could be using that money to do research, sharing of results, or paying someone's salary to go around getting people to take it up. But that isn't working. I think it is because they get to the end of a project and do not really know what the outcome is and it is then difficult to go further.

And for some, it is down to a poor or non-existent linkage with other down-stream requirements (in, for example, assuring *resilience*).

Cash transfers to local population could encourage local providers but these are not going to emerge automatically unless investment is made in their development as well. The problem is the HA donors will not/do not see this gap in the innovation system as their problem. This needs much more joined up thinking.

8.7 Private sector

Although much of the goods and services provided by humanitarian aid agencies are provided by private sector organisations, the relationship is largely an arms length one (as discussed in

Components of the Humanitarian Innovation Ecosystem

under *relationships*). According to respondents, the relationship has to be very transparent and as one agency administrator put it:

They are scared of being seen to get too close to any external actors - especially private sector players.

It was suggested that this might not only be down to the need for public accountability but that there were historic and ideological underpinnings based upon these relationships (which are not one-sided). Whatever the reasons, the private sector participants in our sample were invariably concerned about how impenetrable the sector seemed to be and expressed intense frustration at the lack of interest or understanding of how to encourage innovation. We regularly told that: *It's difficult to understand how the humanitarian aid sector works and interacts; We found it difficult to find the right people; You need for persistence for getting through to the humanitarian sector; The biggest issues is finding ways in; There is no clear route to the decision-maker; It wasn't immediately obvious who the decision-makers were.*

With important exceptions, particularly where private sector companies provided essential communications and logistical services during emergency situations, the comments made by private sector respondents in our sample imply a relationship which is certainly sub-optimal in terms of encouraging innovation:

Is there a real gap in knowledge or perhaps it is the system for extracting info out of the system which is not working very well ... agencies simply have not managed to find it out in the marketplace - they are not aggressive seekers of new ways of doing things.

OK and well meaning but they really don't seem to be asking the right questions of companies or seek to engage their value creators in real problem solving ... more like a perverted Google mission statement....'do no harm'... but don't worry about doing any thing really worthwhile either just as long as you are not behaving like a big bad corporation. It shows up the gap between non-private sector people trying to act and talk like the private sector but not really able to think like them.

Of course, some of the problems are directly related to the nature of demand in this sector:

From a supplier, product innovator perspective, the big problem with humanitarian sector is that when a disaster happens you will be asked to deliver as many products as you possibly can, for example 10,000 tents in one month, for as long as there is a requirement and then nothing. Yet when you have specialised, expert staff such as those that might be involved in new product development or process innovation, you need to keep them on salary and available and gainfully deployed. Very difficult as they do not have non-Humanitarian Aid sector market outlets so no real possibility of cross subsidization of operating staff budget - apart from inflating margins on the orders they do get in from the agencies.

Not all, however, saw the problem as totally bleak:

Components of the Humanitarian Innovation Ecosystem

We are making inroads. Particularly with (DFID's) Rapid Response Team. But in reality there is very little evidence of significant changes to relationships between private and humanitarian aid sector.

9 Recommendations

Perhaps not entirely surprising, when asked for recommendations which might encourage innovation the focus was more on what was needed than on how to accomplish it. Respondents clearly felt the need for reform of the system although there were differences, in the degree of change that was required and its location. Our sample identified at least three different types of innovation to which attention needed to be paid. These included innovation to the way the entire system is organised (e.g. the role of different institutions, their operational mechanisms, partnership arrangements, etc.); innovation to the way new technologies and practices are identified, developed and disseminated; as well as policy innovations related to the principles of humanitarian aid such as how the mandate is understood and what it means to be locally driven.

Some respondents focused on the change in the ethos of organisational culture and their orientation towards innovation. They were concerned, largely because of the nature of the sector, that innovation should be incremental and *enable us to do what we do better*. But they did wish to see innovation being the concern of all in the organisation and not something that was left just to a policy unit:

It had be something that was pervasive across the organisation, from within the organisations - including the cleaners - not just the policy unit.

This does not, of course, mean that policy units should not be involved but, as one respondent who has advised large international agencies in the development sector noted, policy needs to be directly *woven* into what goes on across the organisation including incentives, monitoring and reporting. He went on to suggest that

There is a measure of the development of a language of how innovation can be managed, including having guidelines and manuals, etc., as it is considered a good thing to come up with something new. It has to be much more structured in order to get below the sort of organisation that just has an innovation hue.

Another interesting perspective on why the process should be incremental also related to the nature of the sector but had nothing to do with the oft-expressed concern about not putting people at any further risk. Rather it was suggested that:

For the humanitarian sector it needs to be incremental, not only because of the nature of the sector but also because the sector is almost unique in having almost constant feedback loops on experience due to the frequency of disasters (providing a place to prove and scale up innovations) and the rapid movement of personnel between emergencies.

Others, however, took a more radical approach, several of which argued for the need for an independent research centre for the sector. Such an innovation research centre would be:

- built on networked principles, enabling lots of organisations to pool their resources on innovation;

Components of the Humanitarian Innovation Ecosystem

- identify areas where needs for innovation are greatest;
- help to spread the stuff we do have, ensuring adoption is more consistent and systematic;
- focus on amalgamation of efforts on common challenges or opportunities (e.g. the use of 3D printers);
- engage with the private sector, locally and globally;
- create and maintain the space for innovation, be a place people can be seconded to for fellowships to think about their great idea and get support to develop it;
- overcome the social bias of people working in the sector.

Another respondent, who felt that the *ideas and solutions are out there, but we don't know what the problems are*, took a slightly different approach suggesting that what was needed was *some kind of senior advisory council*. And others felt that all donors should:

co-ordinate their funding (preferable via a single organisation) the setting of performance measures, reporting standards and above all leverage their position to harness innovative capabilities of the private sector. End users would benefit much more if what were currently separate, ad hoc forums, would come together and provide some central leadership and coordination.

Or that what was needed was a new business model, calling for:

a new clear future model for aid that brings together aid agencies, governments, private sector in flexible ways depending on the context, and we need to be much better as accepting our role and position in this new model.

9.1 R&D funding

Regardless of where along this dimension of reform the respondents positioned themselves, there was consistent agreement about the need for more ring-fenced funding for R&D, diversified funding sources, including (for some) a venture capital approach. They did not think that the required funding should be drawing on humanitarian aid budgets but needed to be specifically designated research and innovation budgets and that it needed to be linked to sufficient resources to take an innovation to scale. One interviewee referred to an interesting exception in which a Canadian government grant of \$300,000 to World Vision was earmarked for experimentation within a much larger budget that funded *core, predictable business*. Another, however, raised concerns about how much funding would be required or what that availability would be suggested that:

We have to be much more targeted, because large-scale engagement is not feasible.

9.2 Innovation spaces

The sample was also consistent in championing the need for *spaces* for innovation, places in which there was *a culture of experimentation, where people need to know that failure is permitted*.

Components of the Humanitarian Innovation Ecosystem

I think there are ways of creating safer spaces for people to do testing and try out new ideas and have the sort of space to have the resources, the support, the capturing of knowledge and sharing.

In terms of the location of such spaces there was no unanimous position with some clearly believing in the independent centre approach mentioned above, others contending that they could be incorporated within existing organisations (which seems to be the prevailing model for the sector today); and for some others that the cluster/sector approach is the right way to go (although others expressed concerns that they were too insular and not sufficiently inclusive). Supporters of the cluster approach argued that:

There are probably more opportunities for cross-fertilization than a diagram of a cluster would suggest.

We need greater sharing or pooling of resources and data for desired outcomes – the cluster approach is the ideal form.

And at least one felt that:

We need to go where there is nobody who understands what humanitarians do but who might think of a different way of doing something (the MIT Innovation Lab was suggested as an example).

9.3 Research trials and impact evaluation

Closely associated with an increase in R&D spending and exploratory spaces for innovative activities was an understanding of the need to build in trials, impact assessment and evaluation. Impact studies and more attention being paid to the actual performance of products were seen as a necessary precursor to scaling –up.

Real-time operational research is a gap in the sector. People just don't have the same ability they do in other sectors to critically reflect and gather data as they go. Real-time evaluations should be the tool that addresses this gap, helping to improve decision-making. But it is often seen as a parasitical process, not adding to effectiveness, something to be avoided or obstructed. This limits both aid effectiveness in general, but it also weakens organisations ability to see and value innovations, and to see how well they work, and to make better decisions about whether something is actually worth adopting.

9.4 Collaboration and the private sector

However organised or located there was also agreement that it had to be a collaborative, interdependent, and co-ordinated approach and that new actors had to be integrated into the process. Ideas put forward included:

Move towards a 'shared platform' approach to innovation and adoption between organisations and sectors.

Components of the Humanitarian Innovation Ecosystem

We need a greater sharing/pooling of resources and data for desired outcomes - the cluster approach is the ideal form.

A good starting point would be if we could agree on the two or three big problems and really make an effort to solve those big problems and find a process for doing that that would help to address some of the structural issues.

A role for the private sector, while perceived as important, still raised concern for some:

Private sector and disasters is not a marriage made in heaven. It is not an obvious consumer opportunity. Nor should it be.

But for most there was a clear need to have better connectivity with the private sector. Their reasoning was:

It is not just to fill in the gaps that donors leave, but to see how the profit motive can drive certain aspects of innovation - say when we have identified a solution that works, getting the private sector to produce it at scale to drive down costs. And we have to be keenly aware that the profit imperative has limitations in humanitarian response.

We need to look at where the strength of innovation actually sits and where it's complementary between the humanitarian agencies and the private sector.

Looking at who's in the best position to provide certain services and who's best positioned to help facilitate that. It will change back and forth depending on it being something the humanitarian sector is better able to deliver, what the government is able to deliver, and what the private sector is able to deliver. It requires that coordination and facilitation and a broad perspective on the landscape in terms of what is already being done by different actors and how they are innovating and also how can we engage them.

Respondents also pointed to an increasing importance of new types of partnerships with foundations such as Nike and IKEA as well as initiatives such as DFID's Global Funding Streams and Rapid Response as models which had promise.

The other aspect of the private sector which one interviewee suggested gets forgotten was the local and national private sector, and he felt that this is very revealing about how we think. He complained that:

We simply don't do enough to help small traders and so on set themselves up again after disasters. We need to make sure we re-energise these local networks, rather than undermine them.

9.5 Engaging affected groups

Involvement or engagement with affected groups has long been a concern (if not a practice) within the sector. While perhaps once perceived as merely a moral responsibility, over time it has become accepted that local knowledge and practice also can add value and acceptance and is important for product development. As one successful manufacturer put it:

Feedback from the beneficiaries was critical for product development.

More recently the trend to user involvement in the innovation process has become an essential part of widening the innovation ecosystem. And, while there was a general consensus in our sample that *a good place to start innovation is to understand the mind-set of the recipient*, the difficulty in accomplishing this is not necessarily easy. As one interviewee described:

Easier to focus innovation upwards - to appeal to the donors than downwards towards the beneficiaries. Especially if it's in an ad hoc rather than systematic way. There's a recognition that there needs to be significant adaptation in the sector because the beneficiaries are using technology in new ways and innovating themselves on the ground which changes the dynamics of their relationship quite significantly with the people providing assistance and puts quite a glaring light of accountability stands on what humanitarian agencies are doing on the ground. Easier to adapt from the instigations coming top-down than look at the huge organisational and internal changes that would be required to meet what's happening on the ground.

Aside from needing to develop new kinds of partnerships and also a willingness to interact with affected groups in a new way, there were few suggestions as to how this might be achieved other than perhaps allowing the programme to be more field driven and promoting more of a customer service mentality amongst staff. And, finally, there was the view that both donors and aid agencies need to focus on more grassroots projects run by local people that are more directly in contact with beneficiaries and *treat them as customers not as charity recipients*. This is, perhaps, also in line with those who thought that there needs to be a blurring of the line between development and humanitarian communities.

9.6 New approaches from the donors

Overwhelmingly the sample's recommendations seemed to be directed at donor organisations. Simply put, the interviewees accepted that innovation requires risk and the currently the system does not tolerate risk. The views, expressed in numerous ways by many of those interviewed, was that financial structures need to welcome, not deter, innovation and change. While few elaborated upon how this might be accomplished, the following short statements are representative of our sample:

They need to use their purchasing power to change the way their money is being spent.

There needs to be a feedback loop coming from the recipients to the deliverers.

Components of the Humanitarian Innovation Ecosystem

Need donors to fund organisational innovation strategies, giving them time to listen, time to think, time to anticipate; an investment in R&D plus accountability for change in the organisation

Donors need to reduce transaction costs which cause them to focus on fewer bigger checks for fewer bigger programs that are too big to sail.

Donors need to be educated about importance and process and risks and costs and mechanics of innovation.

Donors need to be able to take the long-term approach which can't be done with year by-year funding.

Slightly more extended responses, but nevertheless in a similar vein of thought, was the view that:

It is vital that government and donor agencies create a conducive and affordable and seam free environment for innovators to communicate and express. Donors need to make it easier for innovators to get to the right people to get decisions made on the right grounds and the right information. Existing systems are too complicated, bureaucratic, decision-making chains are too long. A lot of innovation is being killed off because of the difficulties getting through.

Two answers provided to the views expressed above were 1) to re-examine the role that can be played by foundations, especially as they are, theoretically, not inhibited by tax-payer considerations and restrictive attitudes towards risks, and 2) a more direct link between donors and the private sector.

You need to be able to take risks. We are a private foundation so we have a board which gives us a lot of freedom to try things. We can take risks and afford to fail. That's more difficult for DFID and other donors because they need to cover their backs. So finding a way to create an acceptance for risk-taking would be very important. Try to keep things simple, we try to be long on innovation and short on bureaucracy. Innovation can be done in a simple way. It doesn't need an academic, complicated approach.

The donors - the source of the funding - should take money away from the charities and instead deliberately set out to use their resources to encourage and incentivise the private sector to think creatively and long term about breakthrough innovations (of any kind - technology, distribution, process, accountability, etc..) to address HA needs and allow them – the companies to make a decent profit. The incentives and moral superiority attitudes are all oriented in the wrong direction.

10 Conclusions

The intention behind this work-package was, together with the literature review, to contribute to the development of a systems map and the framework for the case studies to be undertaken in Work-Package 3. To that end, a number of issues or themes were highlighted, some of which would appear to effect the way in which the humanitarian innovation ecosystem functions. These issues, amongst many others, will be further explored in the case studies, and include:

Resources: There is evidence that funding models have changed in recent years, but there is still concern about whether the funding should be part of general funding budgets or dedicated funding for innovation, and whether, overall, there is sufficient financial resources for innovation. This raises questions about what levels of funding are needed (which may vary depending on different types of innovation), how this funding is allocated, as well as issues about the efficiency and rate of return. This in turn raised issues as to a perceived bias in the system towards larger participants, leaving smaller actors in the sector without access to R&D funding. There are also questions about non-traditional approaches to funding (or more broadly resourcing) innovation, e.g. crowdsourcing and crowd-funding, user innovation, open innovation, frugal innovation. In addition, it would seem to be important to consider hidden innovations that are not necessarily apparent by looking at directly funded activities, although there is an issue about whether there is sufficient slack in the system as it is currently organised to permit more emergent forms of innovation.

Roles: The humanitarian aid sector is clearly dominated by a few major players that are likely to have a disproportionate influence on the innovation ecosystem. As such, it is important to consider how far such actors are acknowledging the importance of innovation and the extent to which this is embraced in their practices as well as their rhetoric. Another theme is about the role of mavericks and entrepreneurs operating partly outside the system and how the system can benefit from both *disruptive innovators* (e.g. mavericks) as well as *sustaining innovator*. A key question/dilemma here is whether seeking to bring such actors into the mainstream system will actually curtail their ability to innovate. There are also related issues about how to open the system up to external/new actors who may bring new knowledge.

Relationships: The interviews show numerous opportunities for interaction that may help to support innovation, as well as constraints in terms of excluding or limiting the participation of particular groups. This needs to be assessed more systematically and extensively to see the specific configuration of relationships in the sub-sector case studies. There is also scope to explore in more detail how the relationships are developed and structured, e.g. in terms of competing or complementary interests, distributions of power and influence, closeness, duration, and timing of interactions, etc. With regards to the latter, there are associated issues about the (dis)connection between the more on-going relationships typically needed for innovation and those that are needed to deliver operational responses on the ground (where there are lessons from project-based and other forms of temporary organising). The case studies are also likely to explore opportunities for bringing in those currently excluded from the ecosystem.

Rules: The main issues here are about accountability and risk, and how to create incentives for innovation. The case studies will further explore the extent to which rules inhibit or facilitate

Components of the Humanitarian Innovation Ecosystem

innovation. Questions to take forward include how to create a suitable balance between reliability and experimentation (i.e. spaces where failure is permitted and does not have the same implications it would have in the field), how to ensure the capacity to identify and reflect on existing rules and bring about changes (there is obviously a big tie-in here with issues of existing interests), and what kinds of incentive systems exist and how do they interact.

Routines: The interviews covered a lot of the specific routines and activities that are thought to be important elements of innovative activities, e.g. search, selection, integration, development, testing, implementation, diffusion. In the next work package these need to be investigated in much greater detail with reference to more concrete examples. There is also an overarching question about the relative contribution of formal routines and planned innovation compared with informal routines and emergent innovations.

Results: The case will explore the extent to which innovations are occurring in different sub-sectors, where they are coming from, how they are assessed, whether they have resulted in (or intended) either tactical or strategic change, the degree to which they are incremental or radical, etc. The general picture is also of a lack of systematic evaluation of innovations and indeed a possible lack of innovations to evaluate.

Both **Restrictions** and **Recommendations** section cut across all the previous areas and we anticipate finding large differences between the various sub-sectors to be selected for the case studies. The sector has typically been described by various members of our sample as being insular, of sticking to dominant designs and innovation trajectories, of adopting a not invented here and business as usual paradigm. The main themes related to restrictions are about embedded cultural practices and mind-sets, structural arrangements, underdevelopment of capabilities, and gaps in relationships. We will explore the extent to which recommendations put forth by interviewees strike any chords in the case study populations although it is likely that many more ways of strengthening the humanitarian aid innovation ecosystem can be strengthened.