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Real-time foresight : preparedness for dynamic innovation networks

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5 Collaborative innovation strategies in global relief

This chapter takes the findings of chapter 4 one step further to develop collaborative innovation strategies for use in response to disasters. It investigates RQ 4: which innovation strategies are used by DINs in global relief? The answer is derived from an analysis of the recovery processes used by the study sample sites. Three different strategies are identified, as applied in Ayam, Keniparam and Kanni.

The analysis employs (1) the identified dynamic network patterns, (2) the primary data, (3) the secondary data, and (4) the central analytical codes which characterise the emerging network strategies. As a contribution to managerial practice, the investigation (a) results in a typology of different innovation networks in global relief and (b) informs us about potential matching parameters. The insights gained from analysing the networked innovation strategies may facilitate better NGO matching in global relief, and will improve the long-term collaboration of TNGO professionals and their local counterparts towards emerging DINs in global relief situations.

The author suggests that a comprehensive theory of sustainable *recovery* has yet to be formulated (cf. Jordan & Javernick-Will, 2013). Early literature defined recovery as a process of return to normality (cf. Quarantelli, 1982). Nowadays, researchers and practitioners claim that successful recovery has to include the motivation of ‘building back better’ and should increase a community’s resilience to future disasters. Thus, numerous elements of recovery would bear further exploration using a qualitative approach to, for example, infrastructure reconstruction,

housing repairs, ‘green’ rebuilding, business recovery, and psychological recovery needs (cf. Phillips, 2014). Yet, understanding how people move through innovative recovery processes and finding patterns that improve collaborative efficacy is of significant value.

To answer RQ 4, the study first investigates the difference between strategic management and collaborative strategies, and then clarifies the process character of collaborative strategies (in Section 5.1). It therefore compares the DINs’ dynamic patterns with strategic management definitions by Mintzberg and Van de Ven (cf. Mintzberg, 1987; Van de Ven & Hargrave, 2006). In section 5.2 it revisits central analytical codes of the study (see codebook in Appendix D) and selects six relevant elements for comparison of the strategies adopted by the three DINs. Section 5.3 classifies three alternative collaboration strategies of innovative global relief: (1) a protective, (2) a capacity building and (3) an advocacy-based network strategy. Here the chapter answers RQ 4.

From the analytical procedure, the study distils two parameters which are of crucial importance in the asymmetric global collaboration. The sample shows how LNGOs as focal actors vary considerably in two dimensions: media alertness and readiness to scale up. Successful network processes are based, to a considerable degree, on network fit in these dimensions (see DIN pattern 5). In section 5.4, the chapter therefore ends with a matrix to align profiles and network strategy in successful global-local relief.

5.1 Strategic management or collaborative DIN strategies

With regards to the cross-case study on successful disaster management in chapter 4, it can be stated that the formation of DINs is the first and most important strategy for achieving both sustainable and innovative relief outcomes. Where crisis management authors hold that "a general lack of cooperation and coordination between humanitarian organisations is among the issues criticised most" (cf. Schulz, 2009) this thesis acknowledges successful ad hoc collaboration as an achievement (cf. O'Brien, 2010; Kumaran & Torris, 2011), and aims to grasp the network strategies of these long-term dynamic innovation processes in more detail.

What is the difference between traditional strategic management and collaborative DIN strategies? To address this difference, the study relies upon the conceptual background of the above elaborated managerial misfit (see Figure 2-1 and Figure 2-2) between traditional strategic management and successful real-time collaboration.

According to traditional strategic management and network theory (cf. Stegbauer, 2010; Partanen & Möller, 2012; Hill et al., 2014), individual actors pursue their own interests in line with hierarchic preferences. As a consequence, strategic networks traditionally are considered to operate according to the following four characteristics.

(1) Networks are seen as rather static structures of actors composed of strong or weak ties.
(2) A network consists of homogeneous actors.

(3) Interaction in strategic networks is fully intended and follows initially defined goals (cf. Partanen & Möller, 2012).
(4) Strategic networks are competitive and have clearly defined limits with regards to (a) actors and (b) time (a static or goal defined perspective).

The differences between the ANT and the characteristics listed above were explained in the thesis before (see Chapter 2) and are expressed here in four statements.

(1) A network is a dynamic process between heterogeneous network-actors.

(2) A focal network-actor is one that initially mastered an alignment of heterogeneous interests.

(3) Focal actors channel divergent interests through an obligatory point of passage (OPP) which marks a moment that unites all different interests (cf. Akrich, Callon, & Latour, 2002).

(4) Aligning interests does not lead to an irreversible actor-network, but still requires steady mobilisation and inscription (cf. Latour, 2005), guided by a shared vision.

In strategic management, decision-making and goal planning are initial acts of individual actors. Admittedly, in both approaches, the actors do follow their own interests. However, the important differences are found in (a) the actor role (see Figure 2-1) and in (b) the (emerging or preset) goals in a collaborative management process (cf. Weber et al., 2014). Collaborative strategies, from the studies' data and in ANT perspectives, are not deliberately designed by a central body or by individual

actors' interest alone, they emerge in a network and are translated by an actor-network (cf. Howcroft, Mitev, & Wilson, 2005).

Collaborative strategies follow dynamic structures and remain uncontrollable for the individual actor. To advance our understanding of a *collaborative strategy*, we use a basic definition with many implicit notions of *strategy*. Although it is taken from a classic work by Mintzberg (see, e.g., Mintzberg, 1990; Ansoff, 1991) it still applies to the DINs. The definition of network strategy accordingly contains the relevant five notions.

Definition 5-1: Network strategy

A network strategy is a combination of five different features: a plan, a ploy, a pattern, a position, and a perspective (adapted from Mintzberg, 1987, p. 12).

Plan and *ploy* are concepts pointing to deliberate action (see Figure 2-1) by central management with periods of strategy-making and planning in advance. In contrast, in the notion of a *pattern* (see Definition 4-1) standard performance, working routines, and real-world processes are addressed.

Through the notion of *position*, the relationship of an actor to his environment of other actors is emphasised, for example, being the first to market, or conversely, *not* being the first. It points to relational and temporal strategy elements.

Finally, by understanding strategy as a *perspective*, internal aspects are addressed: strategy here means to orient an action based on norms, values and visions with a direction or mindset which looks to the future.

Having highlighted these five features in the notion of strategic management, Table 5-1 relates them to the strategic management operations and to the collaborative innovation management principles derived in section 4.5 from network patterns identified from the data.

Thus, for its analysis of collaborative real-time relief, the study falls back on its knowledge of the five collaborative DIN principles (see Chapter 4).

Table 5-1: Strategic management results and collaborative DIN principles

	Feature	Strategic management result	Results of collaborative DIN principles
1	Plan	Consciously intended course of action; decided in advance	Development of a shared vision
2	Ploy	Intended, competitive manoeuvre	Boundary objects
3	Pattern	Stream of actions, whether or not intended	Identified initial and sustained DIN pattern as five collaborative principles
4	Position	Place of an actor in an environment	Double-sided focal actor orientation
5	Perspective	Concept, mental frame, culture	Shared vision

The task now is to explain what the comparison of managerial features in Table 5-1 reveals and which conclusions may be drawn from an analysis of different collaboration approaches. The text which follows discusses a transition from traditional strategic management to collaborative DIN strategies. The discussion is guided by the observable results.

The assignment in Table 5-1 in the second row shows that a shared vision can replace traditional *planning* and initial goal setting in "strategic uncertainty" (cf. Koppenjan & Klijn, 2004:252) to support real-time and collaborative management. In the third row, boundary objects are classified as managerial instruments that allow deliberate, mindful context governance. In dynamic innovation processes, they therefore relate mostly to what a *ploy* is for strategic management. In the fourth row, *patterns* are presented as a strategic means being dynamic governance structures; they are explored by the research design (see Chapter 4). In the cross-case process analysis, five DIN specific dynamic network patterns were found that can be used to facilitate a successful process management. In the fifth row, *position* as Mintzbergs' fourth notion of strategy relates directly to the last of the observed five DIN principles (see 4.5.5). The double-sided focal actor position correlates with what Mintzberg sees as a strategy: the position is both closest to an external local ecosystem ('closeness' in a SNA approach) and of highest centrality ('between-ness') within a heterogeneous network. It marks the LNGO role in the DIN collaboration above. Finally, the notion of *perspective* in the sixth row relates to strategic management for future concepts and can be seen as a DIN pattern (see Table 4-15) of a shared vision and as the central element of collaborative governance and DIN evolution (cf. Deken & Lauche, 2014). From the study sample, it is evident that an early developed shared vision co-determines each network strategy from the beginning.

To sum up, many features of strategic management are also found in underlying collaborative network patterns that facilitate the emergence of DINs. Still, the most frequent and important features of traditional strategic management, planning and ploys, have to be dropped and replaced by complementary concepts for collaboration in dynamic innovation processes. To find out about different innovation strategies in collaborative relief, it is necessary to further investigate the collaborative strategic features of pattern, position, and perspective.

5.2 Investigating collaborative innovation strategies of DINs

The objective of this section is to identify the innovation strategies of DINs in global relief. Table 5-1 provided the analytical elements of the framework needed to explore the emerging innovation strategies realised by the successful DINs of the study sample. Six of the most relevant codes from the developed codebook (see Appendix D) are used to investigate the networked interaction and to identify the innovation strategies.

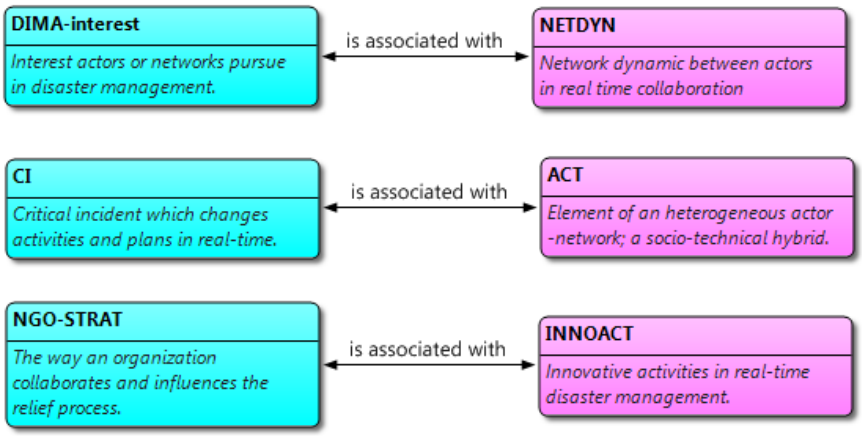

Figure 5-1: Coding categories selected to explore collaborative innovation strategies

Figure 5-1 presents selected codes in blue and pink boxes. Central analytical codes of this qualitative study have already been introduced in a coding scheme in chapter 3 (see Figure 3-1). The narrative case studies of the sample have been presented in chapter 4 as case 1: Ayam, case 2: Keniparam, and case 3: Kanni (see Section 4.1). This section brings together (a) the most frequent CIs, (b) the focal actors' divergent interests, and (c) the most prevalent network dynamics in all cases.

In the blue boxes on the left-hand side, three codes are listed that provide important information on the LNGO: DIMA-interest, CI, and NGO-STRAT. In the pink boxes on the right, three codes provide information on the strategic network level of the three DINs: the codes selected from the constructed codebook (see Appendix D) are NETDYN, INNOACT and ACT. In addition to the six codes, the shared vision of the DINs (see 4.5.2) is also of interest to compare different collaborative strategies in global relief.

The code analysis relies on the interplay of the elements of the focal actor profile with the overall network process dynamics. The interlacement has to be assessed for the reconstruction of the different collaborative innovation strategies of the DINs.

The exploration of the codes and the above specified DIN patterns was executed by analytical operations in ATLAS.ti[58]. The software program was employed to analyse successful real-time collaborations. It is one of several recently available programs for computer-assisted text analysis and was selected for this study for its widespread use and functionality.

The LNGO profile codes were explored as mentioned in Table 5-2.

Table 5-2: Code operations for focal actor profiles

Code	Operation	Source
DIMA-interest	Quote of LNGO director	Narrative data of LNGO PDs
CI	Frequency rank	CI-charts and LNGO PDs
NGO STRAT	Frequency rank	Complete PDs 1-12

The code DIMA-interest is defined as interest actors or networks pursue in disaster management (see codebook in Appendix D). To illustrate

[58] ATLAS.ti belongs to the genre of CAQDAS programs. CAQDAS stands for computer-aided qualitative data analysis software by which even large volumes of data can be processed.

the interests, relevant quotations of the LNGO directors of Dantishan, SRDS, and Trustpeace are displayed in Tables 5.4 to 5.6.

To examine the occurrence of the family code “CI” to gain insights into an LNGO profile, PD-code-occurrence matrices were run in ATLAS.ti, to determine which CIs were most frequent during real-time collaboration.

The strategy matrices (see Tables 5.4 to 5.6) display the three highest ranking CIs for each case, in terms of their frequency. For interested readers, the complete CI frequency graphs can be found in Appendices F1, F2 and F3.

The last code that provides information on the focal actor’s profiles is NGO STRAT. It is defined as the way an organisation collaborates and influences the relief process and contains eleven subcodes (see codebook in Appendix D). By applying the same operation as earlier (PD-code-occurrence matrices), the three highest frequency subcodes in the dynamic innovation process were identified.

The collaborative DIN patterns and element codes were explored as shown in Table 5-3.

Table 5-3: Code operations for DIN patterns and elements

Code	Operation	Source
NETDYN	Frequency rank	Complete PDs 1-12
ACT	Frequency rank	Complete PDs 1-12
INNOACT	Frequency rank	Complete PDs 1-12

The code NETDYN is defined as network dynamic in real-time collaboration and contains nineteen subcodes (see Appendix D). The code ACT operationalises the broad actor definition from ANT which was discussed extensively earlier in the thesis (see Chapter 2). The code INNOACT is defined as innovative activities in real-time disaster management and contains eight subcodes.

The respective shared visions (cf. Dant, 2005) were retraced and analysed using the whole of the primary and secondary data for the DINs. They 'shone through' as claims in much of the electronic and paper data, and especially where boundary objects translated a shared vision (see, i.e., the photobook for Case 3: Kanni). Furthermore, the frequency counts were not employed to arrive at precise figures, but were seen as indicators (cf. Friese, 2014). They made it possible to explore specific, emerging, collaborative innovation strategies. The case studies (presented in Subsection 4.1) are a narrative reference to follow the code analysis conducted on the sample.

The following subsections derive three collaborative innovation strategies through a systematic analysis of cases and assigned codes.

5.2.1 *Collaborative innovation strategy in Ayam*

This subsection describes the collaborative innovation strategy in Ayam. It does so by presenting (A) an assessment, and (B) a table which codifies the *protective network* in terms of an innovation strategy (see Table 5-4).

A: Assessment

The assessment begins by looking at the focal actor side, that is, the NGO STRAT core areas. They point to strong coordination capacities, a

high entrepreneurial orientation and a distinct media behaviour. To invest in a female local workforce and to attract global companies to rural markets was entrepreneurial and risky, as female technicians were not yet established and so future clients were not guaranteed. This entrepreneurial orientation (cf. Rauch, Wiklund, Lumpkin, & Frese, 2009) portends the specific collaborative innovation strategy of the Ayam DIN.

The dominant CI subcodes were CI foreign NGO influx, CI lack of coordination and CI punctual directedness and distance. At first, TNGOs were welcomed by the Indian NGO, but soon they were seen as harmful. That was consistent with both performing its own relief activities, and the entrepreneurial mindset which the LNGO wanted to foster within the fishing community. So, contacts were very much constrained after a short time. The other two CIs rank so high because the LNGO firstly delayed response to the boat repair issue.

In the actor coding (ACT) in the ad hoc and long-term collaboration of the DIN it was observed how local people, local government and cell phone appear as most important actors in real-time collaboration: this observation marks a high inclusive *and* protective network. Its characteristic operation, ubiquitous use of cell phones, bridged spatial, temporal, and hierarchic ditches. At the same time, this ICT usage pattern blocked indiscrete public involvement. It helped to mobilise old partners rapidly and to enrol new partners. Mobiles took care of privacy issues and speed of communication. Finally, it was noted that TNGO, local government, and other actors adopted the DIN's technical, gender-sensible, and entrepreneurial approach to local needs.

After adding the DIN's main foci with the codes NETDYN and INNOACT, the picture of the double-sided focal actor role became even

clearer. The collaborative innovation process was executed in close physical relation and often cohabitation with the affected village people, as all three ranked subcodes of NETDYN expressed. Under INNOACT, coded activities in the creative reconstruction process were manifold. To mention are four of them: (1) medical needs that could not be covered by the costplan (as they happened later than they were allocated by the plan) were addressed by novel barefoot teams, (2) distribution cards were created ad hoc, (3) the engine repair workshop began as a co-venture into local markets, and (4) a savings SHG (Self Help Group) for men was invented and established.

Compared to the other DINs, a highly protective behaviour was adopted in Ayam. In all innovative activities (from night schools to medical relief) sustainability and future responsibility was taken into consideration as for example through regular contacts with the local government. The result was that in only the Ayam case were relief activities taken over by the government when foreign donors left. In innovation networks, such actors with dense contacts and strong ties have a tendency to create shared values, norms, and identities (cf. Katzmair, 2010, p.173). That was observed in the Ayam case, and is described as a dense or closure network (cf. Hemphälä & Magnusson, 2012). The interplay was mainly between the focal actor profile and the overall dynamic innovation. In this way, the emerging collaborative innovation strategy preserved a local culture. This study calls the strategy observed in this innovative global-local collaboration a *protective network*.

B: Table for a Protective Network

Table 5-4 is an illustration of a protective network.

Table 5-4: Protective network as innovation strategy

LNGO profile	**DIN profile**
DIMA INTEREST: *First I was asking for a loan. Then I dropped the idea and thought we mobilize some money locally. And we did that. Dantishan is not looking for more funds to scale up. We don't want to show up in the media either. We wanted to stay with our local people. Many NGO asked me in behalf of the workshop. But we don't want public attention and then fail.* (PD1:380) LNGO director CI: - CI-NGO influx - CI-lack of coordination - CI-punctdirdis NGO STRAT: 1. NGO STRAT-coordination 2. NGO STRAT-entrepreneurship 3. NGO STRAT-media behaviour	NETDYN: 1. NETDYN-NGO-local community 2. NETDYN-local need 3. NETDYN-coordination ACT: 1. ACT-government 2. ACT-cell phone 3. ACT-local people INNOACT: 1. INNOACT-E'ship orientation 2. INNOACT-medicare 3. INNOACT-distribution

5.2.2 *Collaborative innovation strategy in Keniparam*

This subsection describes the collaborative innovation strategy of Keniparam. It does so by presenting (A) an assessment, and (B) a table in

which it codifies the *capacity building network* as innovation strategy (see Table 5-5).

A: Assessment

Again, the second case begins by looking at the focal actor side, and it can be seen that four peaks of NGO STRAT stand out. This LNGO had to master many differences whilst aiming at inclusive village development. This development transformed and scaled up the real-time collaboration process: the inexperienced and small SRDS became an organisation of global standard. Moreover, the organisation had multiple knowhow-exchange donors and was involved with an experienced humanitarian global player in ambitious reconstruction. The Keniparam DIN implemented a technical housing programme, and its LNGO learned to deal with sizeable budgets. Following a period of critical disruptive tension, it fostered innovative lateral relations between multiple TNGOs and donors in real-time. From nearly cancelling the challenging collaboration, the DIN and SRDS excelled in reconstruction of an inclusive, resilient, and multi religious village.

The CI assessment adds to this picture: first, a “lack of resources” and then recurring “contact overloads” hampered the planned course of action. The proximity of the destroyed village to the tourist venue of Chennai was a hardship to nearly all operations. The rocketing market price of cement, high levels of competition, and differences between castes and religions, tourists, and locals made for ongoing CIs. The network dynamics code in Keniparam scored highest among the subcodes NETDYN NGO – NGO and NETDYN-leadership which marks the increase of the

power of the LNGO in the real-time process of this asymmetric collaboration. However, the successful end was envisioned in the shared vision, right from the start. By *capacity building* through expert exchange and up-scaling of the local partner capacities, this DIN finally achieved sustainable ends.

The strongest effect of the code INNOACT is therefore on NGO activity and learning. The institutional innovation of a lateral TNGO network and the transformation of the small voluntary association unfolded in massive tensions between local and global interests, as well as high expectations of donors and beneficiaries. Collaboration with multiple global donors was neither planned nor started deliberately. The specific actor configuration coded for this DIN (high score for ACT donors, ACT local people, and ACT houses) reflects the fact that this collaborative strategy emerged from the CI of the cancellation of 100 houses by one TNGO. To avoid the loss of respect of the local panchayat, from that time on, several TNGOs were enroled and connected.

Technical artefacts that won an actor status in this emerging DIN were contracts and houses. Houses required resilient construction plans, more donors, better legal frameworks, and resilience infrastructure experts. Thus they triggered the scaling up of the LNGO. House distribution and beneficiary selection required frequent village meetings, prompted several revisions in budget plans and ultimately called for an inaugural celebration at the end.

The LNGO had very limited previous experience that could be drawn upon. The will to scale up and to learn under conditions of real-time pressure emerged alongside focal actor strategies to escape contact overloads

and the risk of complete failure. Collaborative capacity building, technology transfer and resource pooling led to resilient local reconstruction in this DIN.

The institutional innovation process of the LNGO induced ongoing, non-linear, and mutually local and global network learning processes. In the interplay of the focal actor profile and the overall dynamic innovation, the collaborative innovation strategy of ‘network learning under uncertainty’ in this DIN emerged over months and sometimes years. This study calls the strategy observed in this innovative global-local collaboration a *capacity building network*.

B: Table for a Capacity Building Network.

Table 5-5 is an illustration of a capacity building network.

Table 5-5: Capacity building network as an innovation strategy

LNGO profile	**DIN profile**
DIMA – INTEREST: *So we said, come on this is ours and we have the funds for this, construction of the houses. We do this and we will take up so many numbers of houses. Only this much - we can do it.* (PD2:237-238) LNGO director CI: 1. CI-punctdirdis 2. CI-lack of resources 3. CI-contact overload pressure NGO STRAT: 1. NGO STRAT-expert knowhow 2. NGO STRAT-differences 3. NGO STRAT-community developement 4. NGO STRAT-multiple donors	NETDYN: 1. NETDYN-NGO-NGO 2. NETDYN-coordination 3. NETDYN-leadership ACT: 1. ACT-donors 2. ACT-local people 3. ACT-houses INNOACT: 1. INNOACT-NGO activity 2. INNOACT-learning

5.2.3 *Collaborative innovation strategy in Kanni*

The subsection below describes the collaborative innovation strategy in Kanni. It does so by presenting (A) an assessment and (B) a table in which it codifies the *global advocacy network* as innovation strategy (see Table 5-6).

A: Assessment

The third case, Kanni, started with an outstanding long-term perspective with a focus on children and a powerful digit-based shared vision of a safe future for '100 children, for 10 years" (see Table 5-6, top left). The focal actor, LNGO Trustpeace, here was aware of the risks that children in particular face in a post-disaster situation. While the LNGO was the first mover with regard to children's rights, the concrete numbers of 100 and 10 emerged collectively from heterogeneous interests in response to the high death toll in this place of Christian pilgrimage at Christmas.

Looking at the code rank of NGO STRAT, the subcode media behaviour dominates, similar to the Ayam case, but the activities coded under this category vary considerably. The profile of the focal actor in Kanni consisted of its strength in PR and sophisticated media behaviour, its expert knowhow in education and advocacy, and a high degree of competence in arbitrating political differences.

The most critical period for this LNGO can also be read from its CI rank: namely, its competition for real estate[59] in the early stages. The next CI peaks were rocketing market prices[60] for cement and then permanent skilled labour fluctuation[61]. Partly, this was due to its advocacy function for other NGOs and TNGOs (working for TNTRC, see below) with higher salaries.

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[59] Code: CI competition.

[60] Code: CI rise of market prices.

[61] Code: CI skilled labour fluctuation.

Looking at the right-hand side of Table 5-6, at the more collaborative elements of the real-time pattern of this DIN, we observe - similar to DIN 1 that refused publicity - in the Kanni DIN that local government appears as a central actor. In addition, local people and media also score highly.

Most frequent network activities, as coded under NETDYN, happened (1) between global (donors) and at the local level, but also (2) between government and LNGO, and (3) among many different local NGOs (NETDYN NGO-NGO). Thus, Trustpeace became part of the Tamil Nadu Tsunami Rescue & Coordination Center (cf. Raju & Becker, 2013). This district-wide NGO platform collected expertise to spread technical, medical, and organisational best practice in relief, for example, using a wireless network for tsunami rehabilitation, the Internet, and community radio projects.

The DIN's most innovative activities happened in the medical field, in new education formats for children and in the center's outreach and transformation into the temporary shelters of its neighbourhood. Therefore under INNOACT learning took place from other NGOs and local families. In more detail, innovations achieved by this DIN were a new 'semi-border' concept, a systematic involvement of tsunami-families and other adults. Its outreach and preparedness trainings achieved clear results. IT- and skill training were spread into surrounding villages and the centre earned for this success a UN Award "Best Practice in Child Rehabilitation" (2006).

Again, the innovation strategy of this network clearly relied on its LNGO profile. The real-time collaboration profited from high media alertness, from existing contacts with politicians and academics, and from an outspoken DIN culture where conflict and punctual distances between

actors were tolerated in order that they should learn from each other in the best ways. This study calls the strategy observed in this innovative global-local collaboration a *global advocacy network*.

B: Table for a Global Advocacy Network

Table 5-6 is an illustration of a global advocacy network.

Table 5-6: Global advocacy network as an innovation strategy

LNGO profile	**DIN profile**
DIMA – INTEREST: *All together expressed the strong wish to support 100 orphelins for a longterm period of 10 years.* Project Fotobook (Appendix B) CI: 1. CI-competition 2. CI-rising market prices 3. CI-skilled labour fluctuation NGO STRAT: 1. NGO STRAT-media behaviour 2. NGO STRAT-expert knowhow 3. NGO STRAT-differences	NETDYN: 1. NETDYN-global-local 2. NETDYN-government-NGO 3. NETDYN-NGO-NGO ACT: 1. ACT-local people 2. ACT-media 3. ACT-government INNOACT: 1. INNOACT-medicare 2. INNOACT-learning 3. INNOACT-NGO-activity

Tables 5-4, 5-5, and 5-6 present findings of the code analysis of the emerging network strategies: as a result, three different collaborative innovation strategies become visible in the cases of Ayam (see Section

5.2.1), Keniparam (5.2.2), and Kanni (5.2.3). The subsection 5.2.4 consolidates the findings in a matrix (see Table 5-7).

5.2.4 *Three collaborative innovation strategies*

At this point, it is possible to answer RQ 5: which innovation strategies are used by DINs in global relief? The emergent innovation strategies in successful real-time collaboration in the DINs of the study sample are summarised in Table 5-7 as three network strategies; they are collaborating (1) in a protective network, (2) in a capacity building network, and (3) in a global advocacy network.

Table 5-7 also summarises the findings that led to the three innovation strategies. In rows 6 and 7, the overview is completed with the addition of two dynamic network patterns (see Chapter 4), formulated as the 'continuous' and the 'strict' managerial collaborative innovation principle: (1) creation of a shared vision (see row 6) and (2) usage of boundary objects (see row 7).

Table 5-7: Overview dynamic network patterns and innovation strategies

	DIN 1 – Ayam	**DIN 2 – Keniparam**	**DIN 3 - Kanni**
Central DIN actors and interests	ACT–government ACT-cell phone ACT-local people	ACT-donors ACT-local people ACT-houses	ACT-local people ACT-media ACT-government
Prevailing CIs in disaster management of LNGO	CI-NGO influx CI-lack of coordination CI-punctdirdis	CI-punctdirdis CI-lack of resources CI-contact overload pressure	CI competition CI rising market prices CI skilled labor fluctuation
Frequent network dynamic of DIN	NETDYN-NGO-local community NETDYN-local need NETDYN-coordination	NETDYN-NGO-NGO NETDYN-coordination NETDYN-leadership	NETDYN-global-local NETDYN–gov-NGO NETDYN-NGO-NGO
Innovative activities in the collaboration process	INNOACT-E'ship orientation INNOACT-Medicare INNOACT-Distribution	INNOACT-NGO-activity INNOACT-Learning	INNOACT-Medicare INNOACT-Learning INNOACT-NGO-activity
Shared vision	*Building back better by local entrepreneurship and enabling gender equality.*	*Inclusive and resilient reconstruction of a multi caste and multi religious coastal village.*	*A lighthouse project for a children's home providing a better future for 100 children over 10 years.*
Boundary objects use	Timely	rarely	continuously high
Innovation strategy	Innovative real-time collaboration in a **protective network**	Innovative real-time collaboration in a **capacity transfer network**	Innovative real-time collaboration in **global advocacy network**

Table 5-7 provides an overview of the central elements of collaborative governance in this analysis. The two additional strategic elements belong to the before identified dynamic network patterns (see chapter 4). Here, the findings contribute to the picture of the different network strategies and reflects the case studies and secondary data analysis (see Appendix B).

The shared visions of the three DINs, shown in cross-comparison in Table 5-7 (see Table 5-7, row 6) reflects the results of the code analysis on central actors and innovative activities within an emerging network: the managerial focus is (a) on female entrepreneurship (Ayam), (b) inclusive reconstruction and resilient housing (Keniparam), and (c) on local people's children and disaster preparedness (Kanni).

The use of boundary objects, in examination of the secondary data for the DINs, was continuously high first and foremost in the global advocacy network, with its cosmopolitan and professional communication standard. The timely usage of boundary objects was lower, and even rarely found in the other two cases.

5.3 Two critical parameters for collaboration in disaster relief

To collaborate successfully in a heterogeneous global-local relief network, two parameters or dimensions of the LNGO profiles and of network collaboration (see Section 5.2) appear to be significant while they vary broadly from one LNGO actor's profile to another in the sample.

These are

1. **Media behaviour (**or **media alertness)**
   (see Table 5-7, row 2), and
2. **Readiness to scale up**
   (see Table 5-7, column 2 versus column 3).

There is a network fit between these two important collaboration dimensions of donor-driven global-local relief (cf. Chang, Wilkinson, Potangaroa, & Seville, 2011). Such a fit would seem to be indispensable (1) when enroling in an innovative network strategy, and (2) in order to realise and profit from the double-sided focal actor role of the LNGO.

The observed LNGOs, in particular, can be polar opposites with regard to dimensions of both (A) media alertness and (B) readiness to scale up. While one LNGO is open to social media use and PR activities online and in all events (the case of Kanni), another LNGO resolutely and successfully refuses publicity (the case of Ayam). And while some LNGOs are eager to scale up in terms of international collaboration (the case of Keniparam), others prioritise their local roots and prefer to maintain indigenous standards (the case of Ayam).

It is the opinion of this study that LNGOs with polar orientations in these crucial collaboration dimensions have the opportunity to contribute to innovative real-time processes and fulfil their double-sided central position in a protective as well as in a capacity building network.

In contrast to industrial corporations, many NGOs and non-profit organisations (NPO) often start without any hierarchical structures. Once they begin to scale up, the situation changes drastically. A higher professionalisation often means division of labour and managerial change (cf.

Cooley & Ron, 2002; Vossen, 2010). While some NGOs prefer to maintain their horizontal organisation and to be managed in agile ways (cf. Lublin, 2011) others grow into hierarchical structures.

Collected data show that (1) LNGOs in asymmetric global-local relief and (2) seed startups in asymmetric collaboration with established companies (cf. Weber et al., 2014) find themselves confronted by a similar dilemma: the choice between scaling up and staying small to preserve their agile structures. This choice has a considerable influence over collaborative innovation strategy - as will be shown in section 5.4.

Nevertheless, it is noticeable that LNGOs with strong entrepreneurial intentions are able to refuse to make institutional changes in size or style. For a successful real-time collaborative strategy, it can be seen from our analysis in section 5.2 that it is highly relevant to know that (1) polar LNGO dispositions exist in both crucial dimensions, and that (2) media alertness and an organisational actors' readiness to scale up are unlikely to change in ad hoc situations.

The dispositions are incorporated in organisational habits and routines (cf. Weick, 1996; Scarry, 2012; Swartz, 2012) and rooted in organisational cultures and norms (cf. Scarry, 1985; Hopf, 2010; Giddens, 2013). They are embodied in the technical infrastructure, in personal preferences, and in a corporation's informal procedures (cf. Giddens, 1984; Latour, 1991; Currion, Silva, & Van de Walle, 2007). In real-time collaboration, such dispositions are reproduced, and do not change immediately.

The finding of the two polar dispositions was checked against peer group data sets and studies of crisis management conducted after the 2004 Tsunami (see, e.g., Werly, 2005; McGilvray & Gamburd, 2010; Karan &

Subbiah, 2011; Kumaran & Torris, 2011) and the search was extended to the recent NGO management literature (see, e.g., Lindenberg & Bryant, 2001; Willetts, 2002; UNISDR, 2006; Vossen, 2010; Schreurs, 2011; Hermann et al., 2012). The existence of the polar disposition was confirmed as both rather unnoticed dimensions have a high coverage in recent publications on crisis management. A second testing of the significance of the two polar collaboration dimensions based on the study sample was accomplished more practically by conducting additional interviews. Again, positive accounts confirmed the significance of the finding for real-time collaboration success in dynamic processes in global relief.

5.4 Matching for collaborative innovation strategies in relief

Putting the study findings in a taxonomic four-field matrix with two polar axes, a robust matching tool for DINs in global-local relief processes is derived. In Figure 5-2, the x-axis marks the polar disposition ‘media alertness’, and the y-axis the disposition between ‘readiness to scale up’ and ‘avoidance to scale up’. Profiling of the LNGOs in this way can (1) speed up the matching of appropriate relief partners and (2) also enable leadership to adjust real-time processes.

Managing dynamic innovation processes and enroling in ad hoc network governance after a CI requires flexibility and adaptability. TNGOs that are aware of their own organisational interest, but also of their own and other actors’ dependend and interconnected position in the field could make much better choices and these more rapidly, on their participation in any real-time collaboration. In the initial turbulence caused by mass-

influx of NGOs and the time pressure of relief, regional public online platforms could offer valuable matching pools with such simple instruments (see, e.g., Stephenson Jr., 2005; Goldstein, 2012; Wukich & Steinberg, 2013). TNGOs whose capacities range from adequate to large scale could search for potential local partners in disaster prone areas that are in for the same.

Such support is longed for in the field. As one LNGO director expressed his hope for better ad hoc collaboration in the future: *"Something like that you should have: A kind of a study on the NGOs, more or less who can be doing what, who will be able to do it and their management style and their capacity, infrastructures and their credibility*" (PD 02:396).

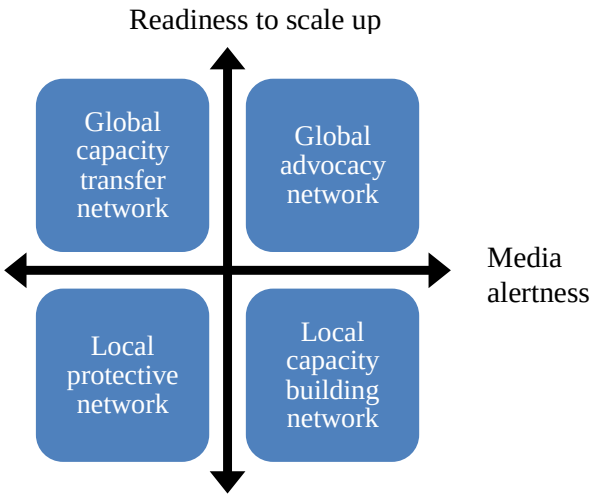

Figure 5-2: Matching matrix for collaborative strategies in global relief

In the first instance, governmental agencies could offer regional matching platforms and national LNGO data bases (see Chapter 6 on pub-

lic real-time foresight) where a small LNGO could present their collaborative profile, in case of sudden incidents and the need to find global support.

In summary, the study has identified various global relief DIN strategies. By cross-case comparison and analysis of the central codes derived from the data, it was found that innovative and sustainable outcomes are achieved in pursuit of very divergent collaborative innovation strategies. The network strategies observed in asymmetric global and local collaboration in recovery ultimately formed a protective network, a capacity building network, or an advocacy network.

Within one successful DIN, however, a common strategy has to be shared and enacted for continuous collaborative success. The double-sided focal actor role (see pattern 5 in Subsection 4.5.5) is of significant importance for local sustainable outcomes. Following an analysis of strategic elements in the collaboration process of all three cases, two critical parameters were revealed (see Section 5.3). These parameters (media alertness and readiness to scale up) mean that it should be possible to supply a robust matching tool for forecasts of a network fit in real-time collaboration in relief and recovery.

Where small LNGOs could present their collaborative profiles for the case of sudden incidents to find global support, we expect progress from digital infrastructures to accelerate the overall formation of global advocacy networks (see Figure 5-2) *and* local protective networks. It is valuable for the formation of DINs to know the difference between them.

At the very least, in situations where no good matches are anticipated between actors, global actors (TNGOs) should consider opting out of relief missions; or could adjust their network strategy to meet the profile of

a local partner, the one which has to implement a programme and reacts in real-time-amongst external and internal network partners.