

GEOGRAPHIES OF VIOLENCE AND VULNERABILITY
AN ACTOR-ORIENTED ANALYSIS OF THE CIVIL WAR IN SRI LANKA

With 7 figures, 1 table and 4 photos

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Geographien von Gewalt, Geographien von Verwundbarkeit, akteursorientierter Ansatz, Livelihoods-Analyse, Bürgerkrieg, Sri Lanka

Zusammenfassung: Geographien von Gewalt und Verwundbarkeit. Eine akteursorientierte Analyse des Bürgerkrieges auf Sri Lanka

Der Beitrag begreift Gewalt und Verwundbarkeit als soziale Praxis und als einen Prozess, bei dem die menschlichen Bedürfnisse und die menschlichen Sicherheiten ständig umstritten und umkämpft sind. Er definiert Geographien von Gewalt und Verwundbarkeit als Arenen, in denen menschliche Freiheiten und Menschenrechte umstritten sind, ausgehandelt werden und gewonnen oder verloren werden können. In diesen Auseinandersetzungen sind die Verwundbaren jedoch keine bloßen Opfer, sondern sie besitzen auch beträchtliche Handlungsmöglichkeiten. Sie sind ständig bemüht, gewaltsame Bedrohungen ihres Lebensunterhaltes abzuwehren, sie passen sich zielgerichtet an wechselnde Gewaltregimes an und sie versuchen jederzeit, Optionen auszuhandeln, die ihnen bei der Sicherung ihres Lebensunterhalts helfen können. Der Beitrag verwendet daher einen akteursorientierten Ansatz für die Analyse von Gewalt und Verwundbarkeit. Dieser Ansatz wird an zwei empirischen Fallstudien in einer besonders Gewalt betroffenen Region an der Ostküste von Sri Lanka während des Bürgerkrieges exemplifiziert. Der Beitrag schließt, indem er die Geographien von Gewalt und Verwundbarkeit als soziale Räume konzipiert, in denen die relativen Positionen der Akteure innerhalb dynamischer Machtfelder zu bestimmen sind.

Summary: The present paper views violence and vulnerability as social practice where human needs and human securities are constantly contested and fought over. It conceives the geographies of violence and vulnerability as arenas where human freedoms and rights are struggled for, negotiated, lost and won. In these struggles, however, the vulnerable are not mere victims, but they possess a lot of agency. They constantly try to cope with violent threats to their livelihoods, they deliberately adapt to the shifting regimes of violence, and they always seek to negotiate options that help to secure their livelihoods. The paper therefore employs an actor-oriented approach to violence and vulnerability. This approach is exemplified by two empirical case studies on particularly violent environments in eastern Sri Lanka during the civil war. The paper concludes by conceiving the geographies of violence and vulnerability as social spaces that have to be mapped according to the relative positions of the actors within dynamic fields of power.

1 Conflict and violence

In his thought-provoking speech to the European ministers on "Rethinking Conflict", JOHAN GALTUNG (2003) pointed out that the terms "conflict" and "violence" should by no means be confused. Violence, according to GALTUNG, is to harm and hurt someone, by physical and/or verbal means. Although conflict may lead to violence, conflict and violence are totally different conceptually. At the core of a conflict there is always an incompatibility, a contradiction between goals. As such, conflict is an integral part of social life; conflict is "as normal as the air around us" (GALTUNG 2003, 2). Conflict, when constructively managed, can even be considered a dynamic force of social development (DAHRENDORF 1992). Therefore, it does not make sense to talk about "conflict prevention": violence is what has

to be prevented. But if conflict is confused with violence, then basic clashes of goals will not be detected until the first acts of direct violence. And, equally dangerous, when no more open violence occurs, "peace" is often declared, confusing the precarious state of non-fighting with actual peace.

In addition to direct violence (physical and/or verbal), the concept of violence can be expanded by adding two more types of violence: structural violence and cultural violence (GALTUNG 2003, 3). Structural violence has political, economic and cultural dimensions. In political terms, structural violence means to deprive people of freedom. In economic terms, structural violence is to deny people their basic needs. Culturally, structural violence means to deprive people of their own culture. All these dimensions of structural violence played major roles in the development of the

civil war in Sri Lanka long before the actual outbreak of direct violence (RÖSEL 1997; KLOOS 2001; BOHLE 2004). Cultural violence, eventually, is those aspects of any culture that legitimize direct and/or structural violence. A common mechanism in creating cultural violence is the translation of “structural antagonisms” into “specific cultural capital” (ESSER 1997, 877), and then mobilizing direct violence in defence of cultural resources such as religion, language, territoriality or historicity. Cultural violence was probably the most powerful force behind the highly “ethnicized” violent conflict that ravaged Sri Lanka between 1983 and 2003 (BOHLE 2004).

2 *Living with violence: an actor-oriented approach*

The present paper views violence and vulnerability as social practice where human needs and human securities are constantly contested and fought over. It conceives the geographies of violence and vulnerability as arenas where human freedoms and rights are struggled for, negotiated, lost and won. In these struggles, however, the vulnerable are not mere victims, but they possess a lot of agency. They constantly try to cope with violent threats to their livelihoods, they deliberately adapt to the shifting regimes of violence, and they always seek to negotiate options that help to secure their livelihoods. The paper therefore employs an actor-oriented approach to violence and vulnerability.

In a first step, a violence-vulnerability framework is developed which addresses the actors and the actions, the agendas and the arenas of both violence and vulnerability. In a second step, the development of the violent conflict in Sri Lanka is briefly discussed, to provide the context of the empirical case studies on violence and vulnerability. The paper then uses the violence-vulnerability framework to analyse the geographies of violence in one district of eastern Sri Lanka which was particularly affected by the brutalities and terrors of the civil war. In a last step, a village study serves to analyse the vulnerabilities of a Tamil fishing community that was caught in the middle of the war. While their sufferings are recorded, the focus is always on their agency, especially on their multiple efforts to buffer and absorb the shocks and stresses of everyday violence that constantly threatened their survival, security and livelihoods. In conclusion, the paper conceives the geographies of violence and vulnerability as social spaces that have to be mapped according to the relative positions of vulnerable actors within shifting fields of power that deeply influence their abilities to live with violence (SCHMIDT a. SCHRÖDER 2001).

To analyse violence from the perspective of those who have to live with it, who experience violence either as perpetrators or as victims, as winners or losers, requires an action-oriented approach that views violence as social practice and as a key factor of human agency. Such an approach has to take at least five analytical steps and raise a number of research questions:

1.) As a first step, an action-oriented analysis has to turn to the *actors* involved. Who are the key users of violence? What makes them violent? What is their power-base? How are they legitimised? And who are the victims? Are they just helpless, or do they rather follow distinctive adjustment strategies adapted to the logic of violence they experience?

2.) In a second step, *violent actions* have to be addressed. What kinds of violent acts are committed? Towards whom/what are they directed? How are they experienced by the victims in terms of risk, uncertainty and vulnerability? How do violent actors themselves interact? What is the nature of the interface between perpetrators and victims of violence?

3.) Thirdly, the *agendas of violence* have to be scrutinized. What are the goals of violent actions? What are the logics of warfare and terror? What tactics and strategies are employed by combatants, war entrepreneurs and profiteers of violence?

4.) In a fourth step, then, *arenas of violence* have to be analysed. These involve questions around “geographies of violence”, including areas of control and contest, spatial arrangements of security regimes and shifting frontlines of violent conflict. How can these arenas be delineated, structured and mapped? How can the dynamics of violence be grasped on different spatial scales? What is the role of resource distribution and spatial networks? How can redistribution of populations and resources be represented and explained through the logics of violence? Are there specific “terrains of resistance” (ROUTLEDGE 1997)?

5.) Eventually, and this is a fifth step of the analysis, the various dimensions of *vulnerability to violence* have to be grasped and livelihoods under violent conflict analysed. What are the most decisive livelihood assets under violent circumstances? How are they distributed and redistributed, utilized and abandoned? How are livelihoods negotiated and contested, won and lost under conditions of violence? How are livelihood portfolios adjusted to the dynamically shifting logic of violence? And again: who are the actors involved, what are the actions and agendas of livelihoods under violence? Are there, then, specific arenas of livelihoods that can be mapped out as “geographies of vulnerability”?

In this paper, these questions are elaborated in terms of a “violence-vulnerability framework” which serves

as the base for addressing geographies of violence and vulnerability in eastern Sri Lanka during the civil war (Fig. 1).

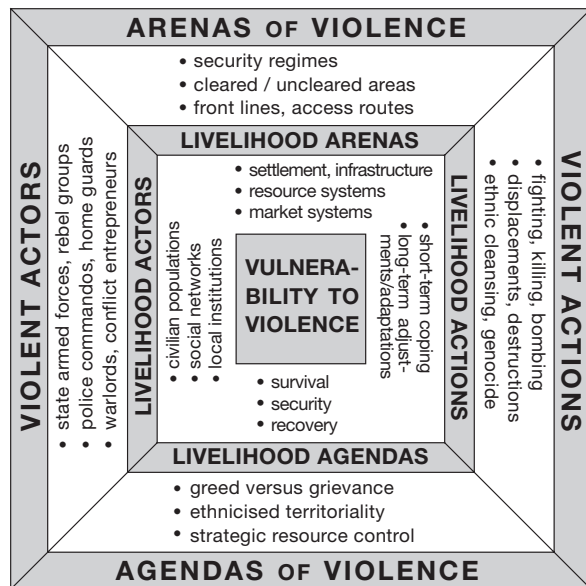
3 Conflict and violence in Sri Lanka

Between 1983 and 2002, Sri Lanka was affected by a civil war that had been fought over the claims of the Tamil minority for an independent homeland (“Tamil Eelam”) in the north-east of the country. The Sri Lankan government, politically dominated by the Sinhalese majority, sought to protect the integrity of the “Sinhala” nation-state. It deployed large amount of troops to fight this claim against the Tamil separatist movement led by the Liberation Tigers of Tamil Eelam (LTTE) (KORF 2004a, 67). Although the main arena of the war was in the north and north-east, the whole of the island was affected by war-induced insecurity including suicide attacks by LTTE cadres, bombing in Colombo, the capital, and numerous acts of terror. While most of the country always consisted of “cleared areas” (under control of the Sri Lankan Armed Forces, SLAF), the north and east of Sri Lanka became segregated into “cleared” and so-called “uncleared areas” (under LTTE control). Furthermore “grey areas” (contested border areas) can be distinguished: the case studies on Eastern Sri Lanka will focus on such grey areas where cleared and uncleared areas have overlapped and where the frontlines between the two have shifted repeatedly.

Interrupted by short-lived cease-fires, three phases of the civil war can be distinguished (Eelam Wars I–III). The First Eelam War was intensified by the intervention of the so-called Indian Peacekeeping Forces (IPKF) in the north and north-east provoking a brutal escalation of violence that led to “orgies of violence” and “times of terror” (BOHLE 2004, 25). This stage of the war is particularly addressed in the case study.

The various stages and “turning points” (KLOOS 2001) of the civil war in Sri Lanka are presented in terms of an escalation model (Fig. 2). It should be highlighted that all three dimensions of violence as distinguished by GALTUNG (2003) were evident (for details see RÖSEL 1997; KLOOS 2001; BOHLE 2004), starting with separate histories and cultural differences between the Sinhalese in the west and south (MAYER 2002) and the Tamils in the north and east of the island (stage 1). Differences in power emerged during British colonial times, and, even more markedly, after independence in 1948. The first turning point can be identified when structural violence emerged in terms of “nationalist exclusion” (WIMMER 2002) of Tamils by means of refus-

A Violence - Vulnerability Framework



Source: author's model, H.-G. Bohle 8/2005

Fig. 1: A violence-vulnerability framework

Ein Analyserahmen für den Nexus von Gewalt und Verwundbarkeit

ing rights of residence to the plantation workers. A second turning point then put the Tamil language under attack. Both acts are clear expressions of “cultural violence” in GALTUNG’s terminology which served to accentuate and legitimize pre-existing “structural” forms of violence. The escalation model also indicates that it was only the sixth turning point that eventually set the stage for “direct” forms of violence.

The violent conflict in Sri Lanka was brutal, dirty and deadly. Human rights abuses were widespread; suicide bombings and terror against civilians became integral parts of “living with violence”. In a detailed account of casualties between 1987 and 1997, BANDARA (2002, 573) counted a total of 96,773 people killed, of whom the majority, 69,401 (=72%) were civilians (Fig. 2).

4 Geographies of violence in Batticaloa District

The notion of “geographies of violence” was introduced by MICHAEL WATTS on the occasion of the Hettner Lecture at Heidelberg University in 1999. When addressing violence as the subject matter of his

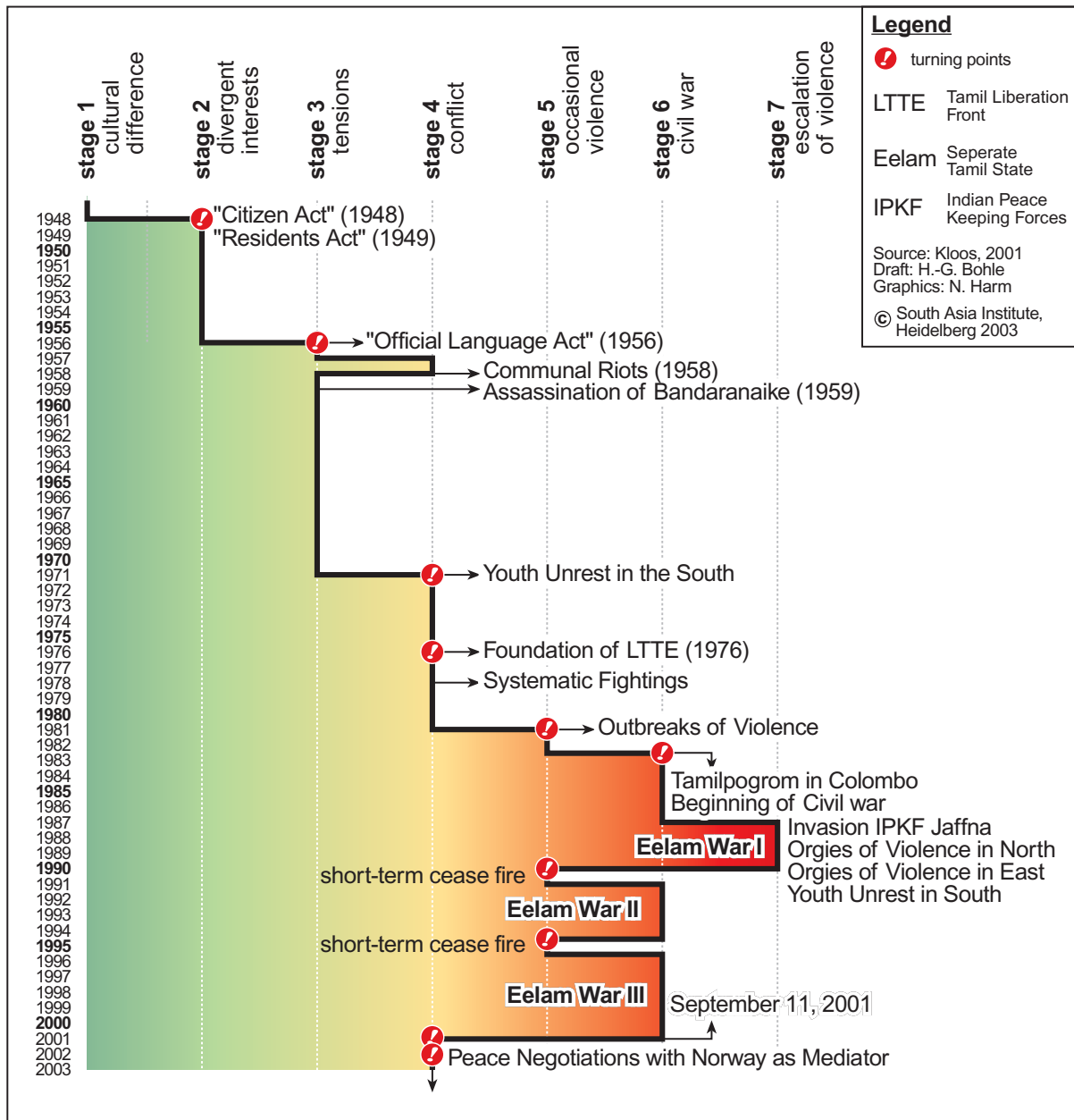


Fig. 2: An escalation model of the civil war in Sri Lanka
 Ein Eskalations-Modell des Bürgerkrieges auf Sri Lanka

lecture, MICHAEL WATTS (2000, 2) approached this subject from the very personal vantage point of “a geographer’s sensitivity to territory, location, to mapping and to the processes of confinement and exclusion. Indeed, I want to start from the idea, taken from Edward Said’s marvellous book ‘Culture and Imperialism’ that violence might be understood as struggles over

geography, where these struggles involve not only guns and bullets, but also symbols, imaginings and meanings. My purpose today is to go some small way toward a *geography of intolerance*, toward, in short, a reasoned account for that which seems beyond reason: the perpetration of mass violence, even genocide, in the name of purity, or some mythical and imaginary form of

community or peoplehood. To try, as a geographer, to shed some light on why these crimes and abominations happen in some places and at some times, and not at others.”

Geographies of violence are not just the spatial results of war and the economies of violence, they are not just confined to violent conflicts around space and territory, but they are also about discourses of power and strategic imaginations of space (KORF 2003b, 25f.). Geographies of violence are imbued with meanings and values of who is “we” and who are the “others”, who is to be included or excluded, both socially and in spatial terms. Geographies of violence, therefore, are first and foremost also geographies of power (ALLEN 2003, 2): “Power, as I understand it, is a relational effect of social interaction. It may bridge the gap between here and there, but only through a succession of mediated relations or through the establishment of a simultaneous presence. People are placed by power, but they experience it at first hand through the rhythms and relationships of particular places, not as some pre-packaged force from afar and not as a ubiquitous presence. The diverse geographies of power that I wish to foreground work through relations of proximity and reach to bring the far-off into people’s lives and also to make the close-at-hand sometimes feel remote”.

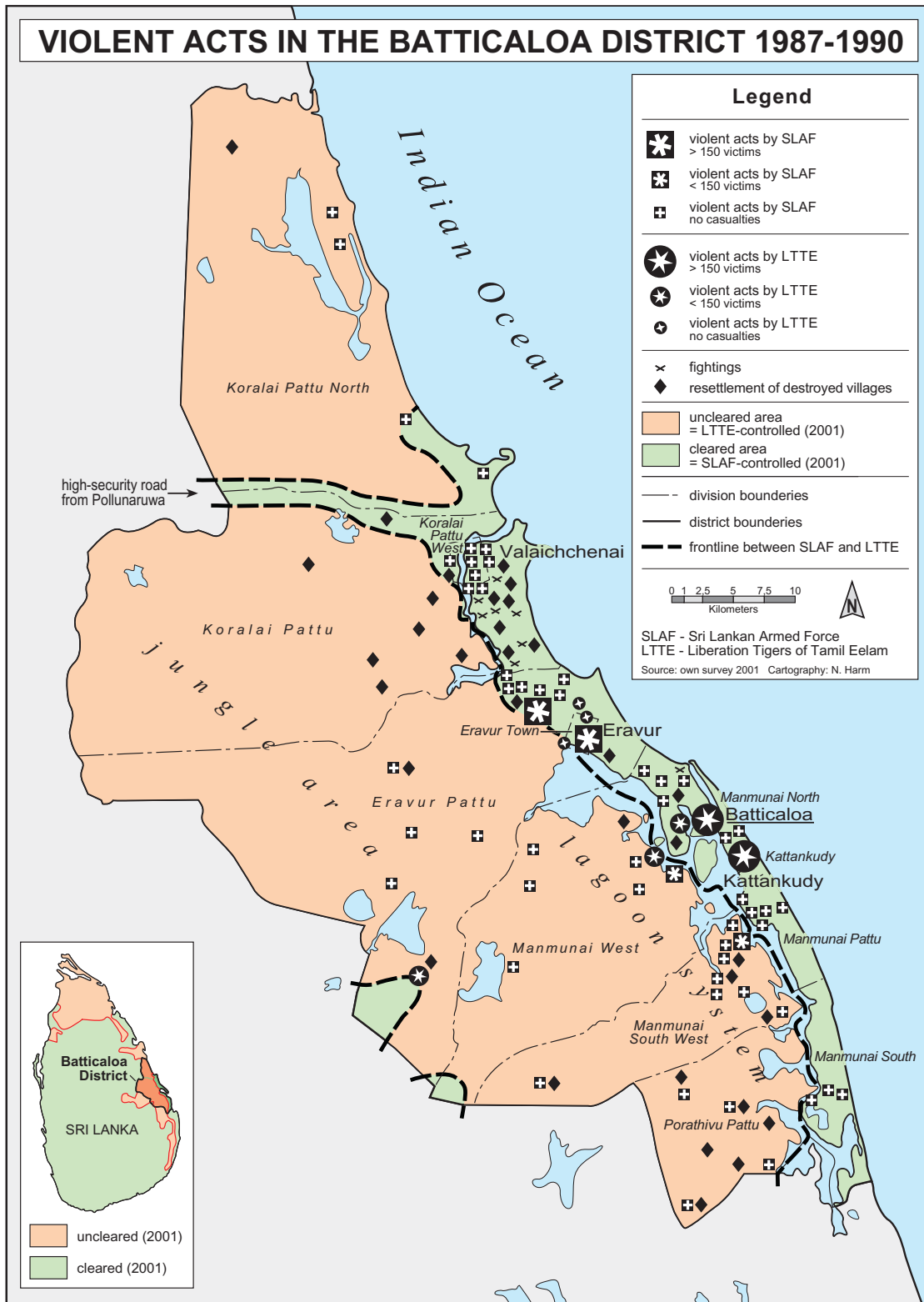
The Sri Lankan east coast, particularly Batticaloa District, where Tamils are the majority and Muslims are a minority group, reflects all these dimensions that make out geographies of violence and power. Especially during the “times of terror” around 1990, when direct violence escalated into ethnical cleansings and genocide, highly complex and dynamic geographies of violence emerged. Their analysis will be based upon the four dimensions of the violence-vulnerability framework presented before (Fig. 1).

4.1 *The arena: geographies of security and insecurity*

The main arenas of the civil war in Sri Lanka were the north and north-east of the island where the LTTE has aimed to establish a separate Tamil state since the outbreak of direct violence in 1983. During the first years of the war, the secessionist conflict was mainly fought between the Sri Lankan Armed Forces (SLAF) and the LTTE. Violence became much more pronounced with the intervention of the IPKF which entered into Jaffna Peninsula in July 1987. Before the Indian troops withdrew in March 1990, the north-east became an area of intense and brutal fighting. Occasional ground battles were supplemented by air attacks by the Sri Lankan Air Force on Tamil settlements. The

LTTE controlled vast areas on the east coast, part of their proclaimed Tamil homeland, especially the inaccessible jungle regions of the interior countryside, while the regular Sri Lankan troops desperately sought to control the most fertile (paddy, coconut, vegetables), densely populated and urbanized coastal strip with its access to open sea fishing. Accordingly, Batticaloa District was divided into “cleared” (SLAF land) and “uncleared” (LTTE land) areas (Fig. 3). Both areas were buffered by the extensive system of inland lagoons (with their abundant prawn resources) that separate the (cleared) coastal zone from the (uncleared) hinterland. The SLAF established a high-security road from Pollunaruwa to Batticaloa town which over nearly 100 kilometres led straight through LTTE land. By means of innumerable check-points, roadblocks, bunker systems and minefields both groups sought to control this strategic access route into the coastal zone of Batticaloa. A system of bunkers and army security posts was also established along the frontline of the district which essentially ran along the lagoon system (Fig. 3). As the map indicates, it was this frontline that became the arena of most intense fighting and violence. As a “grey area” where none of the two sides had clear control, this has been an area where the lines of control frequently shifted back and forth, with the civilian population caught in the middle. The lagoons also became the arenas of the most intense violence because of their strategic position as principal infiltration routes into Batticaloa for the LTTE.

The geographies of security and insecurity in Batticaloa District have changed constantly as frontlines and areas of control have shifted back and forth. As GOODHAND et al. (2000) have shown in their detailed account of the political economy of violence in Sri Lanka, stability was particularly lacking in the “grey” areas where control was contested and random violence ebbed and flowed. The areas most insecure and unstable were those that existed outside any single protection regime. Where Tamil and Muslim communities lived close together as was the case in the coastal strip of Batticaloa (Fig. 4), villagers and urban populations have been living under overlapping regimes of control, violence and terror, which has hardened existing ethnic fault lines. It was mainly in the frontline and grey areas where violence was most acute: here, as is the case in the study village of Palameenmadu to the north of Batticaloa town, violent events have become part of the social memory of the villagers and defining events in their life histories. It also appears that the propensity for violent behaviour at all levels of society was greatest in areas of shifting and overlapping security regimes (GOODHAND et al. 2000, 396–400).



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Fig. 3: Geographies of violence in Batticaloa District, 1987–1990
Geographien von Gewalt im Distrikt Batticaloa, 1987–1990

4.2 *The actions: geographies of terror and control*

It is no wonder that the geographies of violence reveal a multiplicity of violent events that spatially concentrated along the frontline between the two security regimes of cleared and uncleared areas. A survey undertaken by the author and his research assistant, a retired officer from the Sri Lankan Fisheries Department in all the twelve divisions of Batticaloa District that took into account all the 348 settlements of the district, revealed more than 100 violent incidents in the late 1980s/early 1990s alone (Fig. 3). More than half of them were outbreaks of fighting in the coastal zone. At first glance, they were just regular fights between the SLAF and the LTTE. At second glance, however, most of them involved outbreaks of Muslim-Tamil violence that were systematically fuelled by the war parties. While the Muslim minority mainly engages in trading and is concentrated in small urban settlements along the coastal strip, the Tamil majority is more involved in agriculture and fishing. For centuries, these communities – both of them Tamil-speaking – had lived together more or less peacefully (RÖSEL a. WAGNER 1989). Now, full-fledged ethnic clashes and even ethnic cleansings occurred, when Muslim home guards, supported by SLAF troops, attacked neighbouring Tamil communities mainly in the small towns of the coastal zone, killing dozens of them and expelling the survivors. LTTE commandos also acted most brutally by carrying out bomb attacks on busy Muslim market places and even mosques. In Batticaloa town and Kattankudy, for example, LTTE bombs killed hundreds of Muslim shoppers and worshippers (Fig. 3). Since then, the ethnic geography of Batticaloa District has been redrawn with an increasing proportion of the population living segregated in ethnic enclaves (GOODHAND et al. 2000, 398). In the rural hinterlands, but also in the coastal zone to the north of Batticaloa, SLAF ground commandos and air force attacks destroyed dozens of Tamil villages that were suspected as base camps and recruiting points for the LTTE (Fig. 3). In any case, the civilian population of Batticaloa, both Tamils and Muslims, were the main sufferers and victims of the conflict, being caught in the middle of the “geographies of violence” in times of terror.

The coastal zone of Batticaloa District, in general, and fishing communities, in particular, were exposed to strict systems of spatial control exercised both by the SLAF and the LTTE. The Sinhalese army, for example, developed a narrowly knit control system over the entire north and north-east of the island, consisting of zones of restriction, supervision, no-entry and security (RÖSEL 1997, 199). The zone of restriction that ex-

tended five kilometres into the open sea and 100 meters on to the beach heavily restricted the livelihood opportunities of around 300,000 coastal fishermen, most of them Tamils. In the uncleared areas, the LTTE established its own regimes of control, including taxation, administration, education and justice (BOHLE 2004, 25).

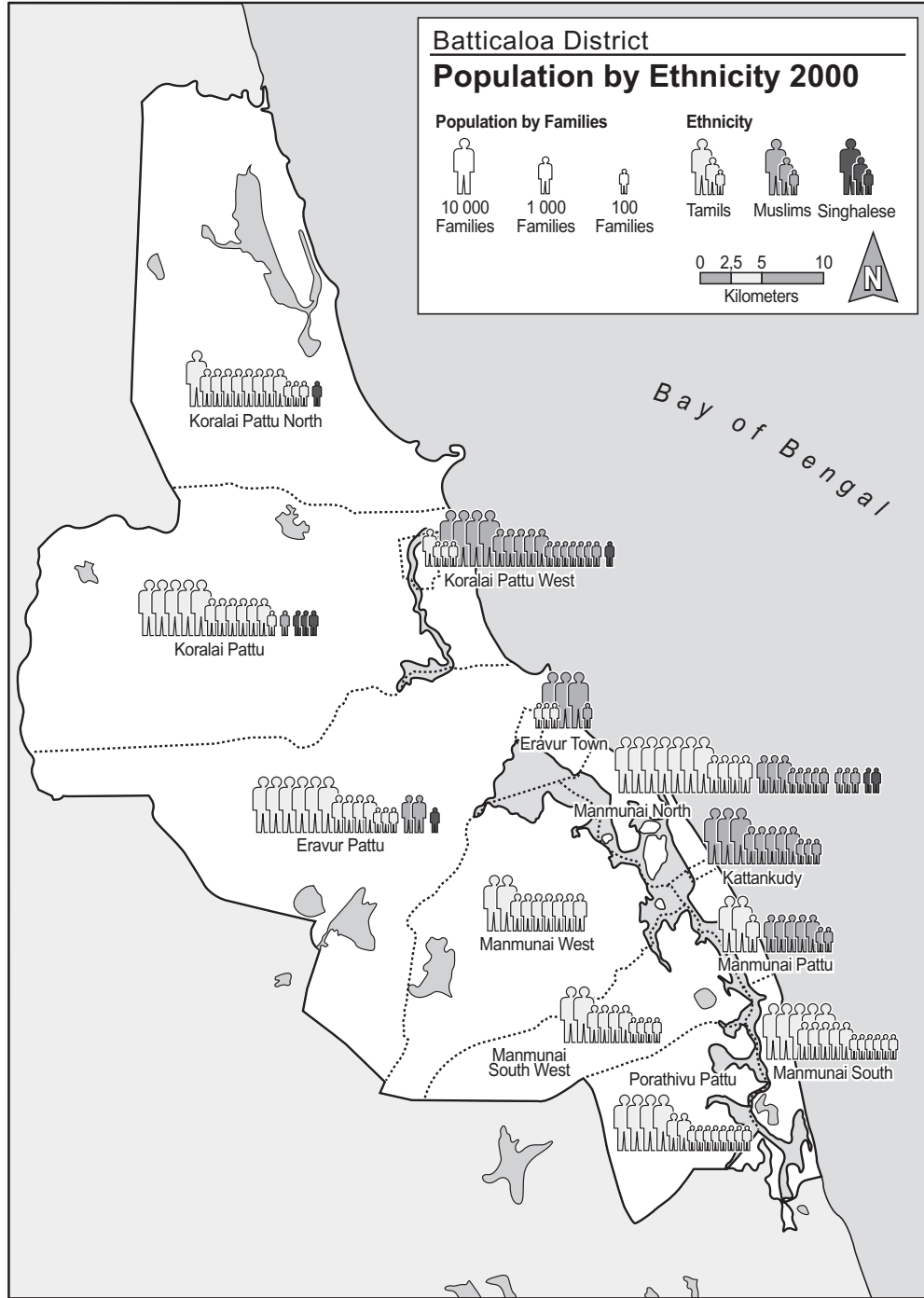
4.3 *The agendas: geographies of ethnicised territoriality*

The agenda of the violent conflict in Sri Lanka was basically about nationalist exclusion policies (WIMMER 2002) on the part of the Sinhalese state, and secessionist policies on the part of the Tamil Tigers. To this end, spatial imaginaries were put into place and spatial strategies were employed by both sides that included, among others, large-scale Sinhalese irrigation and settlement schemes in the dry zone of the east (proclaimed to be the “holy land” of the Sinhalese irrigated by the “Sinhalese” Mahaweli River, see RÖSEL 1997, 100) and, conversely, imaginations of a separate Tamil homeland in the north and north-east of the island (claimed to have been colonized and developed into a “hydraulic”, irrigation-based civilization by Tamils over the centuries). Although the Sinhalese are still only a small minority in the irrigated areas of the northern hinterland of the district (Fig. 4), their presence is the reflection of a major political campaign of the Sinhalese government that started in the 1950s and that, under the Mahaweli-Ganga Irrigation Scheme, sought to systematically place Sinhalese settlement colonies into those areas that became claimed as homelands by the Tamil Tigers during the war. Accordingly, the percentage population increase of Sinhalese communities all over the dry zone of eastern Sri Lanka between 1953 and 1981 was 425%, while the Tamil population increased by 145% and the Muslim population by 136%, respectively (BANDARA 2002, 412).

During the civil war, the geographies of violence in Batticaloa District were also characterized by displacements, restrictions on mobility and the spatial segregation of communities along ethnic lines. Especially during the times of terror, the systematic “production” of refugees became an integral part of the agendas of violence for both parties (RÖSEL 1997, 23). To expel the enemy implies new space for settlements, jobs, positions and political influence for one’s own group. Conversely, refugees from the own community can be used to capitalize on the cruelty of the enemy, thus promoting solidarity and support from the own group and deepening their hatred and determination to fight. Moreover, for the LTTE, refugee camps and welfare-centres became

focal points to recruit fighters. In 1997, among a total of 18 million inhabitants in Sri Lanka, around 2.6 million internally displaced people were recorded (BAN-

DARA 2002, 569), nearly all of them in the north (Jaffna: 896,000) and the east (Ampara: 512,000; Batticaloa: 443,000; Trincomalee: 327,000). All over the country,



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Fig. 4: Ethnic composition of the population in Batticaloa District, 2000
 Ethnische Zusammensetzung der Bevölkerung im Distrikt Batticaloa, 2000

both conflict parties established concentration camps where innumerable civilians were retained on grounds of alleged support or sympathy to the enemy. Many of them were brutally tortured.

4.4 *The actors: geographies of war and survival economies*

A range of political and military actors were involved in mobilizing violence that was not centrally controlled. In addition to the SLAF and LTTE, armed bodyguards of politicians, police commandos (“Special Task Forces”), Tamil militant groups, home guards, and armed army deserters all exerted violence. In the north-east, the army even “franchised out” (GOODHAND et al. 2000, 396) security functions to Tamil paramilitary groups such as the Rasiq group, TELO and PLOTE who were involved in community intelligence and terror. Such groups were only loosely controlled and were responsible for widespread human right abuses. As a matter of fact, the Batticaloa leader of the Rasiq group, Gandhi, was killed on September 14, 2005 when an army camp in Batticaloa town was attacked. Apparently he was killed by his own people because he had allegedly “sold out” to the LTTE-“franchising” happening in many different ways.

As GOODHAND et al. (2000) have impressively shown in their analysis of the political economy of war in Sri Lanka, military actors, both regular and irregular ones, also played an important role in determining economic relations and shaping the mechanisms of wealth production and distribution. The authors identified three different types of economies that emerged as a result of prolonged violence in the north-east: a war economy (controlled by conflict entrepreneurs); a speculative economy (engineered by armed forces and conflict profiteers); and a survival economy (involving the vast majority of the population).

The geographies of both the war and the speculative economies were characterized by sharp increases in regional imbalances (GOODHAND et al. 2000, 399). On the one hand, war and violence widely restricted economic opportunities, leading to stagnation or economic regression. Factors include widespread destruction of property (houses, boats, coconut trees), economic blockades (i.e. on importing agricultural inputs or machinery to the uncleared areas); restricted access to natural resources (deep sea and lagoon fishing; access to agricultural lands); decline of social services and infrastructures (hospitals, schools, roads); restrictions on mobility (through roadblocks and the pass system); multiple displacements; presence of minefields and military camps. Accordingly, land and infrastructure fell into disuse, market systems collapsed, economic investments

sharply declined, food insecurity increased, and dependency on social welfare and food stamps grew. Competition for limited resources increased, and many people retreated into subsistence, some even falling back on illegal activities including petty crime.

On the other hand, war entrepreneurs and conflict profiteers did extremely well (GOODHAND et al. 2000, 400). One of their strategies was rent-seeking behaviour at various levels, stretching from pay-offs on arm contracts to issuing identity papers, from taxation of traders, goods and bus passengers at check-points to violently taking parts of fish harvests from the fishermen. Another strategy was to systematically control market networks and price formation. The whole economy of Batticaloa District became protectionist, depending upon maintaining and exploiting price differences between Colombo and the eastern provinces, and between the cleared and uncleared areas within the region.

On the whole, regional and social disparities in Batticaloa grew enormously during the violent conflict. A loud discourse of grievance became superimposed by a silent discourse of greed by those “doing well out of war” (COLLIER 2000). Conversely, narrowing economic opportunities, sharp competition for scarce resources, and increasing poverty created vulnerabilities for the poor who had to fall back on survival economies. How they sought to cope and adapt, and how they lived with violence will be explored in the context of an empirical study of Palameenmadu, a Tamil fishing village north of Batticaloa town.

5 *Geographies of vulnerability: the case study of a Tamil fishing village*

5.1 *Vulnerability to violence*

Vulnerability to violence can be conceptualized as having a double structure (BOHLE 2001). One part of this structure is the *exposure to violence*, be it direct, structural or cultural violence. According to CHAMBERS (1989, 1) this can be called the external side of vulnerability to violence. Its meanings and mechanisms are explored in the last section of this paper. The other part of the double structure of vulnerability is *coping with violence*, that is to employ short-term and long-term strategies of adaptation to violence, adjustments to its consequences, and recovery from violent impacts. This can be called the internal side of vulnerability to violence. This internal side is the essence of the notion of “living with violence”. It will be explored in some detail in the next section of this paper, which is based on an

empirical case study, which was undertaken between 2000 and 2003 in Palameenmadu (Fig. 5).

5.2 Case study methodology

The case study comprised of seven rounds of empirical surveys that combined quantitative and, more importantly, qualitative methods of enquiry. The survey included a panel on income, assets, family structures, education and occupational characteristics of each of the 308 households of Palameenmadu, with a focus on the 112 fishermen's households of the village. All the fishermen's households were ranked according to wealth and vulnerability by PRA-wealth ranking methods. Various social maps of the village were drawn. Two rounds of PRA surveys then focussed on exploring the livelihood situation of the fishermen by means of a stratified sample comprising of one-third of all households in each of the five vulnerability ranks distinguished ($n=35$). This detailed survey explored the individual vulnerability context of the households, their asset portfolios, livelihood strategies and livelihood outcomes. Another round of enquiry then recorded the life histories of ten selected fishing families, again representing different ranks of wealth and vulnerability. A last survey which was actually only undertaken in March 2003 after direct violence had come to an end focussed on the structure, functions and dynamics of the social capital of all surveyed households before, during and after the violent conflict.

It must be admitted that researching complex social processes in unstable and risky environments turned out to be highly problematic. The research process was occasionally disrupted by violent incidents in the village, it was always closely observed both by Sinhalese and Tamil intelligence, and it was always ethically sensitive and emotionally strenuous when addressing the victims of violence, terror and trauma. As such, the research process clearly reflected all the practical, methodological and ethical challenges faced by researchers working under conditions of violent conflict (GOODHAND 2000). A particular problem is that of assessing vulnerabilities and livelihoods in fluid and violent situations, where there are usually constraints on people talking freely and truthfully (GOODHAND et al. 2000, 393). This last challenge was to some degree levelled out by talking to the same fishermen repeatedly over a period of nearly 30 months, and by addressing more sensitive issues only after a good basis for confidence had been built over the time.

Compared to the village surveys undertaken in eastern Sri Lanka by GOODHAND and LEWER (1999) and GOODHAND et al. (2000), KORF et al. (2001) and KORF (2004b), the research findings of this village study

certainly contain even more fine-grained and "thick" descriptions, but the focus on only one village also puts strict limits on any forms of generalisation. The findings of this case study will be presented by again structuring them according to the violence-vulnerability framework (Fig. 1), with focus first on livelihood arenas and actors, and then on livelihood agendas and actions.

5.3 The livelihood arena:

overlapping security regimes and violent environments

Palameenmadu has had a war history outside a single security regime. As a fishing village inhabited exclusively by Tamils, its control has been contested between SLAF and LTTE, and between paramilitary groups throughout the war. Its geographies of security and insecurity have been complex and dynamic, and its survival space has been determined by ebbs and flows of violence between violent actors with the worst incidents occurring during the intervention period of the IPKF (1987–1990) and the "times of terror". The fishing community of Palameenmadu was always caught in the middle of overlapping security regimes.

During the "times of terror", Palameenmadu was nearly completely destroyed by SLAF troops. The villagers spent months either at welfare camps at the University of Batticaloa or with relatives in adjacent villages. Due to its location in a "grey" area, the families in Palameenmadu were always suspected by the security forces of being LTTE supporters. The villagers experienced numerous army round-ups, their houses were burnt down, fishing boats and gear were destroyed or confiscated, villagers were killed or disappeared, especially young men. Four of the fishermen were killed in 1990, another four were deported to the concentration camp of Bussa by Special Task Forces, where they were detained for months and brutally tortured. 12 fishermen were arrested by Sinhalese security forces, five of them were severely injured when they were beaten up whilst in police custody. Out of the 35 families interviewed, 22 experienced some form of physical violence. During the time of the survey (2000 to 2003), a high number of female-headed households and war widows were recorded.

A heavily fortified bunker system was established by SLAF in the south-western corner of the village (Fig. 5). Along the road to Batticaloa town, several police posts controlled passengers. Police and army personnel turned up regularly when the fish was brought ashore next to the Fishermen's Cooperative Society in order to demand their share. The scrubby coastal strip along the open sea, the backwaters and the lagoon had become an infiltration route into Batticaloa town for the LTTE.



Fig. 5: Palameenmadu fishing village
Das Fischerdorf Palameenmadu

Several shoot-outs occurred between LTTE commandos and Sinhalese security forces at the landing point of the fish, with fishermen caught between them, some of them killed.

The livelihood arena of Palameenmadu also experienced considerable impacts on mobility patterns. Young men were always at risk either of being violently recruited by the LTTE or arrested by the SLAF, so they tried to keep invisible. In their turn, women had to increase their mobility: they crossed road blocks, went to the market, complained at police posts and contacted local office holders. Children were scared to go to school. Overall mobility ranges contracted, even marriage networks became spatially much closer during the war.

The livelihood opportunities of the fishermen narrowed considerably. Access to the open sea was restricted to the five-mile security zone, night fishing in the lagoons was prohibited, the horse-power of mechanized boats was limited by security regulations. The sensitive lagoon ecology was affected by opening the lagoon at the sand bar that blocks the link to the open sea close to Palameenmadu (FÜNFGELD 2004) and, in addition, through artificial dams within the lagoons so that the "Sea Tigers" could not enter it with their high-speed power boats. This prevented the natural floodings and drainage of the lagoon through the seasonal openings of the lagoon into the open sea (FÜNFGELD 2004). The water level of the lagoons was kept artificially low during the monsoon rains so that the bunker systems of the SLAF were not flooded, which contributed to declining ground water levels thus affecting drinking water supply at wells. The precarious prawn ecology was further affected by heavy competition from non-fishing communities including urban inhabitants from Batticaloa town who also turned to fishing to supplement their declining food supply. Illegal nets and methods of fishing were employed. All fishermen agreed that the stock of prawn and fish in the lagoon system had dramatically decreased during the violent conflict. Moreover, marketing of prawns and fish had become increasingly difficult as purchasing power had declined, and transaction costs increased, because of restricted access to market channels for Colombo, the growing power of local traders (most of them Muslims), and the limited bargaining power of the fishermen.

Viewing the war situation in Palameenmadu from a political ecology perspective (for details see BOHLE a. FÜNFGELD 2006), violence was clearly expressed "in the subjugation of the rights of people to determine the use of their environment" (LE BILLON 2001, 561). Control of and access to natural resources became highly con-

tested within political arenas that were controlled by violent actors (PEET a. WATTS 2004). "Struggles over geography" (WATTS 2000, 2) determined the conflict arena of Palameenmadu during the war.

5.4 *The livelihood actors: stratified communities and differential vulnerabilities*

The local community of Palameenmadu is by no means homogeneous. Among the 308 households recorded in the survey (2000), only 112 were fishermen. They mainly live in the old settlement along the ocean (Fig. 5). 103 households were public servants who either worked in Batticaloa (67) or received pensions (36). The remaining households consisted of agricultural labourers (55), most of them working in adjoining villages, petty business men (21) or widows (17). The lowest income groups (< 1,000 Rs/month) contained mainly widows (100%), fishermen (94%), labourers (91%) and petty traders (80%). Among the better-off (over 2,500 Rs/month), pensioners (86%) and public servants (73%) constituted the majority. While only 29% of the fishermen had access to electricity, 72% of the government servants were connected. Conversely, 77% of the fishermen's households received food stamps compared to only 2% of the public servants.

Looking more closely at the fishermen's community, it is evident that they were also highly stratified (Tab. 1). Only 43 out of 112 fishermen households owned boats (two trawlers and 22 mechanized boats; 19 unmechanized traditional catamarans, see Photo 1), while 45 were merely fish labourers (fish coolis) without any fishing gear. 18 fishermen households were at least net owners, six old men worked occasionally as petty fish traders. The PRA-wealth ranking exercise which was accomplished jointly with the village headman, the local teacher and the president of the Fishermen's Co-operative Society (Tab. 1) ranked 72% of the boat owners in the top three of their five categories, 33% of the net owners and none of the fish coolis or petty traders. Conversely, 39% of the net owners, 47% of the fish coolis and 100% of the petty traders were ranked in the lowest of the five categories (Tab. 1). What is called "wealth ranking" in the PRA terminology was, in fact, a lengthy and partly controversial discussion on livelihoods and vulnerabilities (intuitively following the Sustainable Livelihoods Framework put forward by DFID (1999)). The result of the wealth ranking exercise may thus be regarded as a genuine "vulnerability ranking".

While all wealth or vulnerability categories of the fishermen's community were equally exposed to violence, at first glance, the well-to-do fishermen were actually less affected. It was mainly their asset structure,

Table 1: Palameenmadu: economic status and vulnerability of fishermen's households
 Palameenmadu: ökonomischer Status und Verwundbarkeit der Fischerei-Haushalte

STATUS GROUP (asset structure of households)	VULNERABILITY RANKING (as % of status groups)						
	No. of households	Proportion %	Very high vulnerability	High vulnerability	Medium vulnerability	Low vulnerability	Very low vulnerability
Boat owners	43	39	-	28	44	26	2
Net owners	18	16	39	28	33	-	-
Fish coolis	45	40	47	53	-	-	-
Petty fish traders	6	5	100	-	-	-	-
TOTAL	112	100	ø 29	ø 37	ø 23	ø 10	ø 1

Source: Household survey and PRA-wealth ranking exercise, 12/2000 (by author).

their participation in social networks and their access to political power holders that made the boat owners at least economically less vulnerable, and equally so in terms of recovery after violent impacts. It was the boat owners who got more credit for the reconstruction of their houses, who received new boats and nets from NGOs through the Fishermen's Cooperative Society, and who could afford to send family members to relatives in secure areas. They were treated by good doctors when injured, and they employ lawyers to get family members or friends released from police custody or detention camps. Their abilities to respond actively to risks and uncertainties were higher than that of fish coolis or petty fish traders. However, none of the fishermen, with the exception of the president of the Fishermen's Cooperative Society, was prepared to take over any form of leadership in the village (see also KORF 2004b, 286). They preferred to remain invisible and to keep as low a profile as possible, so that they did not become exposed to potential aggressors.

5.5 Livelihood agendas:

search for security and the role of social capital

The overall agenda for the fishermen of Palameenmadu was the search for security – in personal, material and social terms – and the attempt to prevent violent impacts or to at least recover from them as soon as possible. As KORF (2004b, 288ff.) has pointed out, it was mainly social and political resources that provided the means for coping with violence and searching for security. In Palameenmadu, the contention by GOODHAND et al. (2000, 392) holds true that violence does not just imply destruction of social and political capital and that it does not lead to mere social breakdown. Violence, in Palameenmadu, was less about social breakdown than the creation of new forms of social, political and economic relations and networks. Social networks

that constitute “social capital” have indeed played a very major role for the livelihood agendas of war-affected communities. In Palameenmadu, 13 such networks were identified that constituted the building blocks of the search for livelihood security under violence (Fig. 6). In the terminology of WOOLCOCK and NARAYAN (2000), four of these networks can be categorized as “bonding” social capital, another four as “bridging” and five as “linking” social capital. While “bonding” social capital addresses links to people with emotional ties, “bridging” social capital consists of horizontal networks emerging from rational objectives of its members, and “linking” social capital consists of vertical social linkages to superiors.

Without further explaining the social capital concept (for details see BOHLE 2006), the trust of the fishermen in the social networks identified by the survey is by far highest for their families, relatives and friends, but also for church and temple, and, surprisingly, for urban-based fish traders. The latter had proved reliable alliances for the fishermen in terms of fair prices, reliable services and generous loans. Expectedly, trust in linking social capital was by far the lowest, especially regarding political power holders such as the members of parliament of their constituencies. When changes in the level of trust in particular social networks before and after the war were addressed (Fig. 7), bonding social capital had strongly increased, while linking social capital had become markedly untrustworthy. As GOODHAND et al. (2000, 401) have pointed out, violence had effected at least two contradictory trends in the development of social capital: on the one hand, the fishermen of Palameenmadu had fallen back on traditional sources of social capital, on family ties and group-based networks, with a remarkable rejuvenation of the roles of temples and churches (around half of the fishermen are Hindus, half of them Christians). On the other hand, violence had also been a trigger for rapid social



Photo 1: Fishing trawlers at Palameenmadu
Fischkutter in Palameenmadu

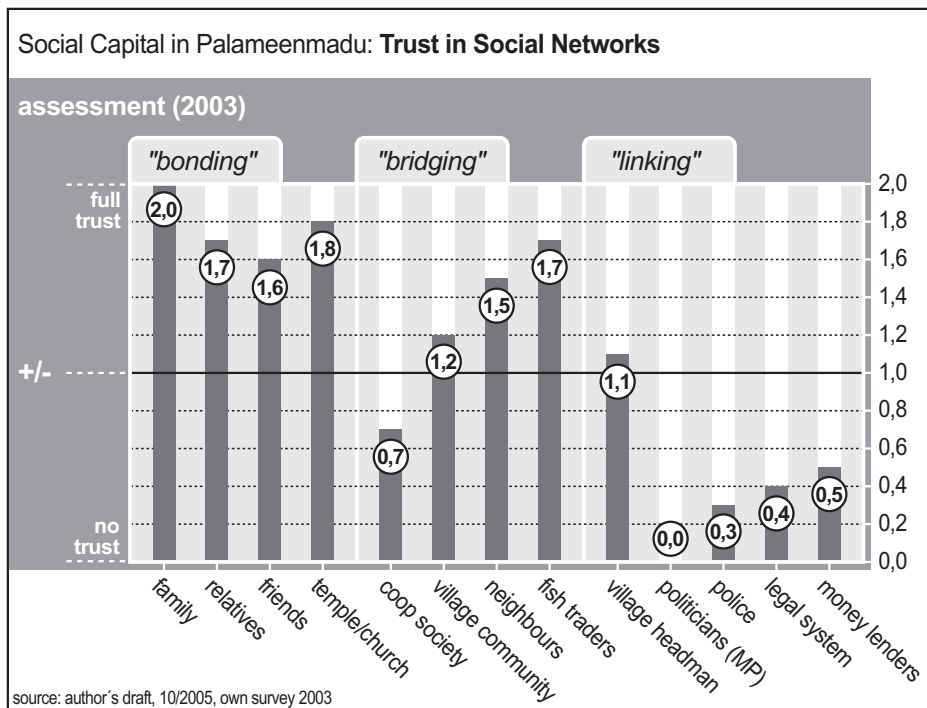


Fig. 6: Social capital in Palameenmadu: trust in social networks (2003)
Sozialkapital in Palameenmadu: Vertrauen in soziale Netzwerke (2003)



Photo 2: Reconstruction of destroyed houses by neighbourhoods
Wiederaufbau zerstörter Häuser in Nachbarschaftshilfe

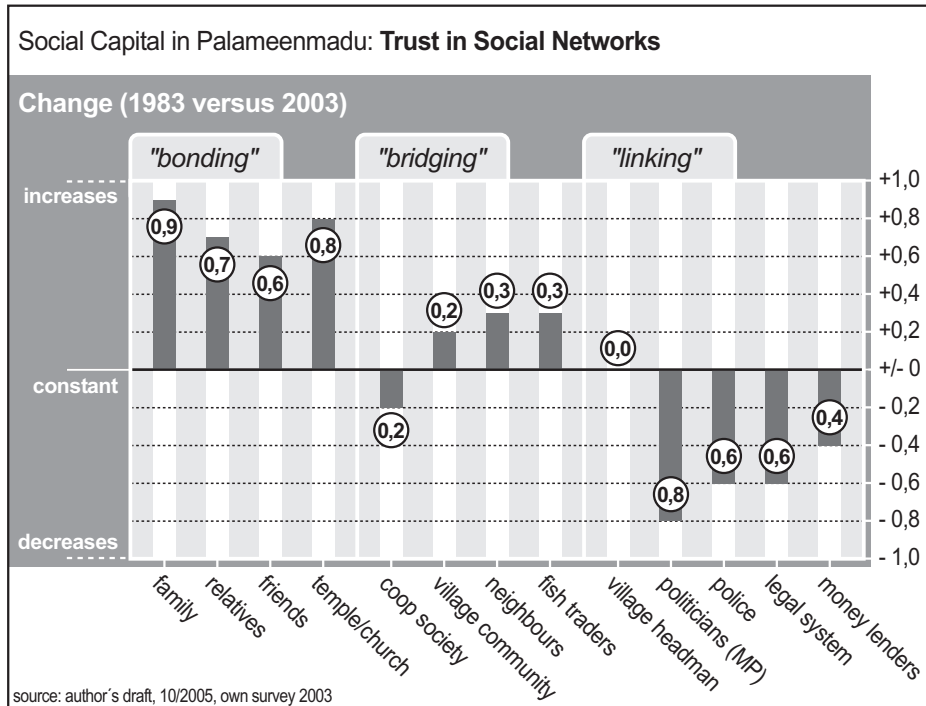


Fig. 7: Social capital in Palameenmadu: shifting trust in social networks (1983–2003)

Sozialkapital in Palameenmadu: Veränderungen beim Vertrauen in soziale Netzwerke (1983–2003)

change, including dramatically altered gender roles, internal reorganisations of households, changed generational hierarchies and a nearly complete loss of trust in political power holders and security institutions.

5.6 Livelihood actions:

reconfiguring livelihood portfolios in a survival economy

In his analysis of livelihoods and vulnerability in four villages of Trincomalee District, KORF (2004b) has identified three “pillars” of household strategies under violence: managing personal risks and securities; adjusting household economies for survival; and accessing external support. All these three types of strategies have

also been employed in war-affected Palameenmadu. However, these strategies are not followed separately, but they are closely interconnected. Changes in mobility patterns, for example, serve all three purposes. When women, especially the elderly, have to take over traditional male roles and enter public spaces, they contribute to manage the personal risks of young men (by, e.g., crossing check-points), they promote household economies of survival (by, e.g., marketing fish in Batticaloa town) and they access external support (by, e.g., contacting local power holders, security personnel or urban lawyers).

Another strategy which serves the objectives of the survival economy is a general retreat into subsistence.



Photo 3: Fishermen’s housing scheme at Palameenmadu
Sozialer Wohnungsbau für Fischer in Palameenmadu



Photo 4: Destitute refugees in Palameenmadu
Verelendete Kriegsflüchtlinge in Palameenmadu

Many fishermen recorded that they restricted their activities and opted to consume their fish in the household instead of marketing it. Contrary to the general search for security, however, some fishermen also undertook risky or even illegal livelihood activities such as fishing outside the zone of restriction or catching fish at night – thus balancing increased personal risk against support to household survival economies.

In Palameenmadu, with very few exceptions, access to external support was generally not sought from alliances with military power holders or security forces. External support was rather secured through access to state welfare such as food stamps or dry ration supplies or through foreign NGOs that provided boats or infrastructure, mainly channelled through the Fishermen's Cooperative Society. For reconstructing their destroyed houses (Photo 2), they received public loans and were supported by their social networks, mainly friends and neighbours. Poor fishermen also sought to get a home in the newly constructed fishermen's colony (Photo 3).

As a general feature, livelihood portfolios were constantly and strategically adjusted to provide as much security and survival opportunities as possible. This applies particularly to the dynamic reconfigurations of social capital (Fig. 6, 7). Those two fishermen's households who had been displaced from their villages, who had lost all their former social relations and who had not been integrated into new social networks in Palameenmadu were by far the most destitute and vulnerable of the whole community (Photo 4). Symbolically, they lived in clear spatial segregation (indicating their social exclusion) from the main village and community on the beach of the Indian Ocean (Fig. 5).

6 Conclusion:

mapping the social spaces of vulnerability and violence

In their attempt to “map” the causal structure of vulnerability in terms of “social spaces”, WATTS and BOHLE (1993), in the context of food security, have outlined three basic mechanisms that shape this space: entitlement and capability; empowerment and enfranchisement; and class and crises (WATTS a. BOHLE 1993, 46–52). When turning to the internal structure of this space, they pointed out that the concept of vulnerability is fundamentally relational, and that the shape and internal “architecture” of the space of vulnerability are structured by social relations (WATTS a. BOHLE 1993, 54).

Focussing on vulnerability to violence, the fundamentally relational nature of the vulnerability concept can be identified in at least three realms. If vulnerabil-

ity to violence is conceived as an entitlement problem under the economies of survival, then vulnerability is located in the sphere of economic and social relations, especially in market relations and social networks where entitlements are produced and reproduced, and where access to entitlements is determined under conditions of violence. If, conversely, vulnerability to violence resides in the powerlessness of individuals, households and communities (LE BILLON 2000, 11), then the space of vulnerability is shaped by power relations and the institutional relations within war societies that determine the rules how “ethnicised entitlements” (KORF 2003a) are contested and fought over, lost and won. Finally, if vulnerability to violence is driven by processes of exploitation of civilian populations and surplus appropriation by war entrepreneurs and profiteers under a war economy, then it occupies a location that lies in the realm of the political economy of war and especially in ethnic and class relations. Geographies of vulnerability to violence can thus be conceived as complex social spaces, as geographically and historically specific networks of entitlement and power relations (WATTS a. BOHLE 2003, 69).

As the case studies in Batticaloa have shown, these relations are highly unstable, they are constantly negotiated, contested and reconfigured. The geographies of vulnerability to violence are therefore social maps that represent dynamic patterns of social and economic, political and military, institutional and cultural practices (WATTS a. BOHLE 2003, 68) that are constantly adjusted and readjusted to the shifting logics of violence. From the perspective of the civilian population, they are experienced by being exposed to direct personal and material violence, and by being forced to live with and cope with structural forms of violence which they experience as restrictions and exclusions, as repressions and exploitations through powerful groups. In essence, the geographies of violence and vulnerability are therefore always geographies of power, too, in the sense that “people are placed by power” (ALLEN 2003, 2). It is civilians such as the fishermen of Palameenmadu who experience violence and vulnerability through the shifting power relations of particular places where they have to live with violence.

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References

- ALLEN, J. (2003): *Lost geographies of power*. Oxford.
- BANDARA, S. M. (2002): *Lionsong. Sri Lanka's "ethnic conflict"*. Colombo.
- BOHLE, H.-G. (2001): Vulnerability and criticality: perspectives from social geography. In: *IHDP-Update 2/01*, 1–5.
- (2004): Geographien von Gewalt – Kulturgeographische Interpretationen des Bürgerkrieges auf Sri Lanka. In: *Petermanns Geographische Mitteilungen 148 (2)*, 22–29.
- (2006): Soziales oder unsoziales Kapital? Das Konzept von Sozialkapital in der geographischen Verwundbarkeitsforschung. In: *Geographische Zeitschrift 93 (2)*, 65–81.
- BOHLE, H.-G. a. FÜNFELD, H. (2006): The political ecology of violence: contested entitlements and politicised livelihoods in eastern Sri Lanka. In: *Development and Change*. (forthcoming)
- CHAMBERS, R. (1989): Vulnerability, coping and policies. In: *IDS Bulletin 20 (1)*, 1–7.
- COLLIER, P. (2000): Doing well out of war: an economic perspective. In: BERDAL, M. a. MALONE, D. (eds.): *Greed and grievance. Economic agendas in civil wars*. Boulder, CO, 91–112.
- DAHRENDORF, R. (1992): *Der moderne soziale Konflikt. Essay zur Politik der Freiheit*. Stuttgart.
- DFID (Department for International Development) (1999): *Sustainable livelihoods guidance sheet*. London.
- ESSER, H. (1997): Die Entstehung ethnischer Konflikte. In: HRADIL, S. (ed.): *Differenz und Integration. Die Zukunft moderner Gesellschaften*. Frankfurt a.M., 877–895.
- FÜNFELD, H. (2004): Poverty among small-scale resource users in times of volatile conflict transition. Conference Paper. Conference on poverty and conflict – a complex relationship. Colombo.
- GALTUNG, J. (2003): Rethinking conflict: the cultural approach. Speech delivered at the informal meeting of the European ministers responsible for cultural affairs. Council of Europe. Strasbourg 17–18 February. www.coe.int/T/E/Cultural_Co-operation/
- GOODHAND, J. (2000): Research in conflict zones: ethics and accountability. In: *Forced Migration Review 8*, 12–15.
- GOODHAND, J. a. LEWER, N. (1999): Sri Lanka: NGOs and peace-building in complex political emergencies. In: *Third World Quarterly 20 (1)*, 69–82.
- GOODHAND, J.; HULME, D. a. LEWER, N. (2000): Social capital and the political economy of violence: a case study of Sri Lanka. In: *Disasters 24 (4)*, 390–406.
- KLOOS, P. (2001): A turning point? From civil struggle to civil war in Sri Lanka. In: SCHMIDT, B. E. a. SCHRÖDER, E. W. (eds.): *Anthropology of violence and conflict*. London, New York, 176–196.
- KORF, B. (2003a): Ethnicised entitlements? Property rights and civil war in Sri Lanka. ZEF-discussion papers on development policy 75. Bonn.
- (2003b): Geographien der Gewalt. Handlungsorientierte geographische Bürgerkriegsforschung in politisch-ökonomischer Perspektive. In: *Geographische Zeitschrift 91 (2)*, 24–39.
- (2004a): Food security in times of war: geographical development research at the nexus of theory and practice. In: *Die Erde 135 (1)*, 61–80.
- (2004b): War, livelihoods, and vulnerability in Sri Lanka. In: *Development and Change 35 (2)*, 277–297.
- KORF, B.; FLÄMIG, T.; SCHENK, C.; ZIEBELL, M.; ZIEGLER, J.; SINGARAYER, R. M.; ABEYRATHNE, R. M.; DEVARAJAH, K.; DHARMARAJAH, D. a. SAKTHIVEL, T. (2001): Conflict – threat or opportunity? Land use and coping strategies of war-affected communities in Trincomalee, Sri Lanka. *Schriftenreihe des Seminars für Ländliche Entwicklung (SLE) 195*. Berlin.
- LE BILLON, P. (2000): The political economy of war: what relief agencies need to know. HPN-network paper 33. London.
- (2001): The political ecology of war: natural resources and armed conflict. In: *Political Geography 20*, 561–584.
- MAYER, M. (2002): *Jugendkonflikte und Entwicklungsplanung. Eine sozialgeographische Analyse der Lebenschancen Jugendlicher und der Potentiale dezentraler Planung in Sri Lanka. Studien zur Geographischen Entwicklungsforschung 21*. Saarbrücken.
- PEET, R. a. WATTS, M. J. (2004): *Liberation ecologies: environment, development, social movements*. London.
- RÖSEL, J. (1997): *Der Bürgerkrieg auf Sri Lanka*. Baden-Baden.
- RÖSEL, J. a. WAGNER, C. (1989): Die Muslime Sri Lankas. Eine religiöse Minderheit im Spannungsfeld eines ethnischen Konflikts. In: *Internationales Asienforum 20 (1/2)*, 43–72.
- ROUTLEDGE, P. (ed.) (1997): *Terrains of resistance: nonviolent social movements and the contestation of place in India*. Westport.
- SCHMIDT, B. E. a. SCHRÖDER, I. W. (eds.) (2001): *Anthropology of violence and conflict*. London, New York.
- WATTS, M. J. (2000): Geographies of violence and the narcissism of minor difference. In: GEBHARDT, H. a. MEUSBURGER, P. (eds.): *Struggles over geography. Hettner Lecture 3*. Heidelberg, 7–34.
- WATTS, M. J. a. BOHLE, H.-G. (1993): The space of vulnerability: the causal structure of hunger and famine. In: *Progress in Human Geography 17 (1)*, 43–67.
- (2003): Verwundbarkeit, Sicherheit und Globalisierung. In: GEBHARDT, H.; REUBER, P. a. WOLKERSDORFER, G. (eds.): *Kulturgeographie. Aktuelle Ansätze und Entwicklungen*. Heidelberg, Berlin, 67–82.
- WIMMER, A. (2002): *Nationalist exclusion and ethnic conflict. Shadows of modernity*. Cambridge.
- WOOLCOCK, M. a. NARAYAN, D. (2000): Social capital: implications for development theory, research and policy. In: *The World Bank Research Observer 15 (2)*, 225–249.