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Livelihood Security and Vulnerability in Nepal, India and Sri Lanka

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Poverty and Vulnerability in a Changing World

"A dynamic process, poverty is a constant struggle. Individuals, households and communities have to cope with the deprivations limiting their lives - seizing any opportunity for escape. But as they struggle, the world around them changes, presenting both new opportunities and new threats." (HDR 1997, p.61).

This is the first paragraph of the latest Human Development Report (1997), of a chapter on "Resisting New Forces of Poverty in a Changing World". This chapter emphasizes that the dramatic changes during the last decades of the 20th century have certainly opened new opportunities for many people. However, these changes have also resulted in new risks, which might reverse the success which has been made in poverty reduction during the past decades. The Human Development Index, which seeks to measure the life quality, has steadily increased since its introduction in 1990; however, this index has, for the first time, decreased in thirty countries in 1997 (HDR 1997, p. 65). The new Development Report clearly demonstrates how this changing world looks like, and which new risks and vulnerabilities it entails for poverty groups:

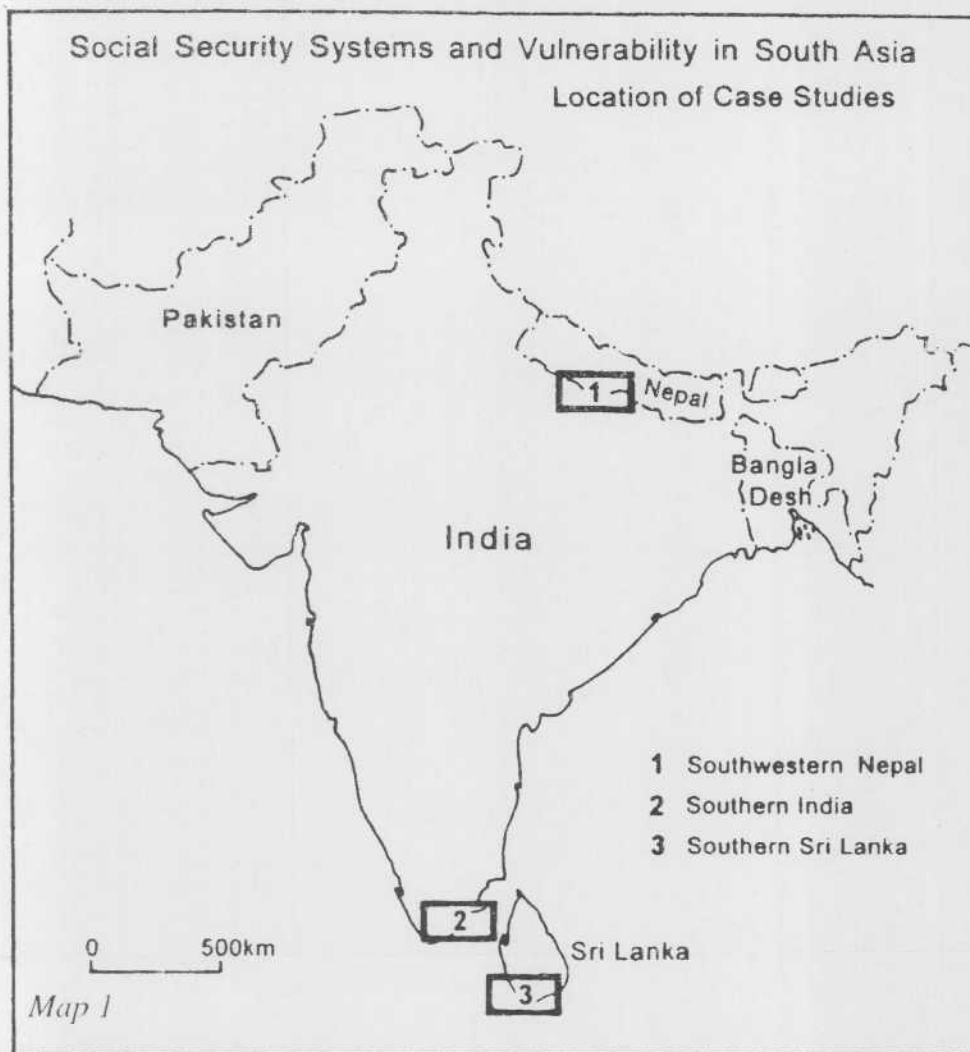
"The world is rapidly changing, with the globalization and liberalization of the world economy, with the rise of new conflicts, with the spread of HIV/AIDS, with the steady deterioration of environmental resources, with demographic changes, with the failures of economic growth in Sub-Saharan Africa, Latin America and the Caribbean and the Arab States and with the transition to free market

economic systems and democratic government. All this change puts added stress on the lives of people. And the people who already suffer deprivation in many aspects of their lives suffer most." (HDR 1997, p. 65).

This last sentence is especially true for those people who live on marginal lands and are affected by an increasing degradation of their natural resources. Even the most conservative estimates of the Human Development Report show that almost half of the world's poorest people, more than 500 million, live on marginal lands such as drought-prone regions and upland areas of the Himalayas and Andes. Under current policies and conditions, that number will probably rise to 800 million by 2020. The ecosystems of these areas are extremely fragile. Soils are susceptible to erosion, rainfall is highly unstable, with considerable seasonal and annual fluctuations. They are often isolated, unreached by markets or socio-economic infrastructure. Recent environmental stresses such as deforestation, prolonged droughts, erosion and dwindling surface and ground water all increase the risks for the poor and vulnerable (HDR 1997, p. 69).

These are exactly the critical regions and the vulnerable groups which constitute the focus of the present study¹ (for location of case studies see map 1). The following case studies concentrate on high mountain regions in Southern Nepal and drought-prone tracts of South India and Southern Sri Lanka, and focus on landless labourers, marginal farmers, and malnourished children.

¹ The authors are greatly indebted to UNESCO/ISSC/IGU for a grant on "Social Security Systems and Vulnerability in South Asia".



Case Study I: Long Term Changes and Current State of Livelihood Security in Western Nepal

Nepal: From Food Surplus to Food Deficit

During the last twenty years Nepal has changed from a net exporter to a net importer of food (Cameron 1995, p. 3). In a scenario for Nepal which was developed by IDCR Cooperative Research Program (1990), it is expected that, in the year 2000, 33 of Nepal's 75 districts will be food deficient. This is a dramatic change compared to the year 1981 when only 8 out of 75 districts were food deficient and 40 were surplus districts.

Land productivity stagnates inspite of increasing use of fertilizers, which is a clear indication for land degradation and excessive utilization of natural resources (Koirala 1992). 60% of Nepal's population have to spend more than 2/3 of their household budgets for food alone. More than 80% of the food supply consists of cereals. The intensity of poverty has dramatically increased in Nepal. While in the year 1975/76, 40% of the population were below the poverty line (around 5.5 million people), this propor-

tion increased to 43% in 1984/85 and 49% in 1992/93 (around 9 million people) (Guru Gharana 1995a/b; Agricultural Perspective Plan 1995, p. 184).

Against this background of ecological, economic and social unsustainability, this research project posed the following questions:

- What are the most critical regions, especially in regard to food security?
- Who are the most vulnerable groups?
- What are the main risk factors that threaten the livelihoods of vulnerable groups?
- How do vulnerable groups in rural Nepal cope with unsustainable development? How do they try to adapt to changing internal and external impacts? And, most importantly, how

(un)successful are their coping and survival strategies?

Rural Livelihoods and Long Term Change in Western Nepal: Some Findings on Food Security²

The project on Livelihood Trajectories and Long Term Change which was undertaken by the School of Development Studies of the University of East Anglia is a resurvey of livelihood analysis that had been done in Western Nepal more than twenty years ago. The project visited the same districts which had been investigated in 1976 and utilized a similar questionnaire to trace long term changes in livelihood security. The findings on food security shed light on various general problems of social security in Western Nepal.

² The authors are grateful to Prof. David Seddon, UEA, Norwich, who has provided a summary of findings on food security issues in Western Nepal.

To start with, there is a significant difference between "food security" and "food self-sufficiency". The former relates to a notion of "capacity to meet food requirements reliably from whatever sources" while the latter relates to a notion of "capacity to meet food requirements from own production". It is clear that the latter is a more "demanding" definition than the former. Furthermore, given the importance in most parts of Nepal, for most households of whatever levels of wealth and socio-economic status, of non-farm income (often from remittances sent back by migrant workers elsewhere in Nepal or abroad), use of the second definition (food self-sufficiency) can be misleading. Despite this caveat, it is felt that the capacity to provide food from own production provides a robust preliminary indicator of vulnerability in rural Nepal, and is certainly an indicator adopted widely by NGOs (eg Actionaid Nepal) and others.

On the basis of the rural household sample survey undertaken as part of the Rural Livelihoods and Long Term Changes' project in Nepal (undertaken in the western region in the districts of Nawalparasi, Rupandehi, Syangja, Parbat and Kaski), it was found that in 1996-97, in the hills, half of the 70 households surveyed had food sufficiency from their own production only for six months or less a year; a quarter had at least a full 12 month food sufficiency. In the terai, 15 per cent of the 87 households surveyed had food self-sufficiency for six months or less, while nearly 60 per cent claimed to have food for 12 months or more. In the terai, only one household reported a loan outstanding for food consumption; in the hills, four households reported loans outstanding for food consumption. Overall in the western region - which might be regarded, on the basis of other data (including the National Living Standards Survey), as a relatively privileged region - at least half of the rural households are at risk and have no reserves on which to fall back in a hard year. The situation would appear to be more difficult in the hills than in the terai, on the basis of the "food self sufficiency" criterion.

On the other hand, a significant proportion of households depend quite heavily on external incomes from sources other than their own farm. Reliance on agricultural labouring can be seen as an indicator of poverty. In 1996-97, 40 of the 87 terai households surveyed were involved in agricultural wage labouring. In total, 36 men and 23 women - almost all adult and on a daily hire basis. In the hills, however, only 15 out of 70 households reported

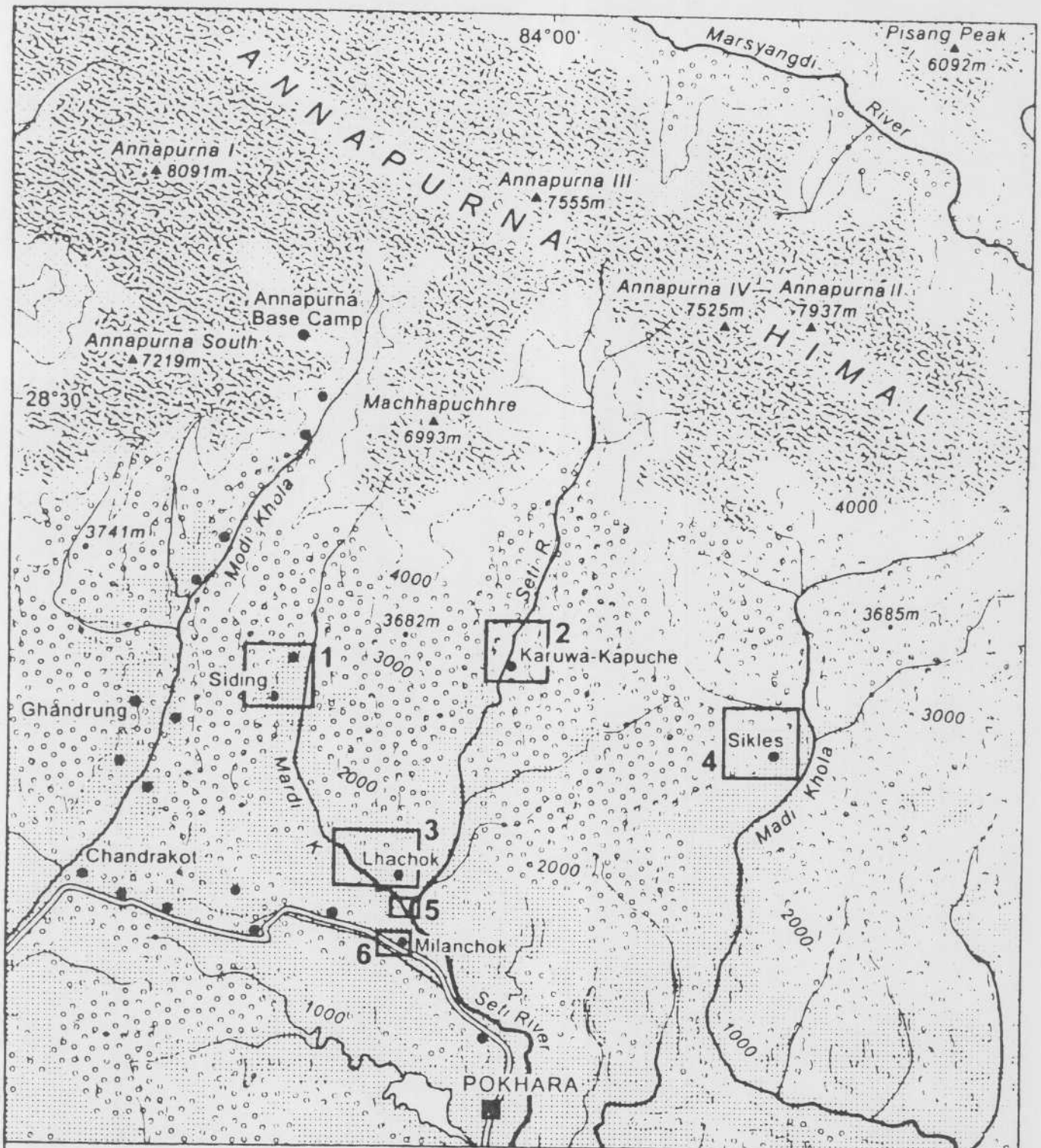
being involved in agricultural day labour - 9 men and 10 women. It is possible that in the hills agricultural labouring is actually declining as a livelihood option, but remains important in the terai. The qualitative wealth ranking undertaken as one of several PRA exercises suggests that those who are marginal depend very heavily on wage labouring while those considered destitute or the poorest depend entirely on agricultural or some other form of labouring.

Off farm income sources are important, for different reasons, for all wealth categories in the hills and the terai. The poorer households usually find employment near to home, in non-agricultural employment such as casual labouring, construction, artisanal work, etc. The choice of non-agricultural income sources further from home are strictly limited for the poorest households. They are therefore rarely involved in migration - unless it is permanent migration of the whole household out of the area (often to India).

Sharecropping seems to be showing a tendency to decline in the hills - where it now involves only 4 per cent (compared with 10 per cent in 1974-75). In the terai there may be a slight increase (14 per cent as compared with 10 per cent in 1974-75). It should be noted, however, that the 1996-97 research indicates that access to land is still widespread in both the hills and the terai, and that the growth of a completely landless class has not really taken place.

The most radical way to change access to land is whole household rural-rural migration. In the 1996-97 survey, 12 male household heads (15 per cent of all households) reported moving from the hills to the terai since their birth. By contrast, 14 male household heads (20 per cent of the total households) reported migration within the hills. More households have a member involved in seasonal labour migration, taking advantage of ownership of their own land combined with agricultural wage labouring elsewhere, usually in the terai or in India (especially the Punjab) where demand for agricultural labour has grown.

As regards migration for other forms of employment, within Nepal and abroad, the data suggest a significant number of households involved. In the hills, 47 per cent of households reported having a migrant worker attached to the household, in the terai the figure was 22 per cent of households. But the level of involvement in labour migration varies considerably across locality and across socio-economic status. In both the hills and the terai, the majority of



- | | |
|-------------------|---------------------|
| High Mountain | River |
| High Pasture | Contour Line (in m) |
| Forest | Peak |
| Agricultural Land | Settlement |

- Research Locations:**
- 1 - Household Survey (Jan. 1997)
 - 2 - Household Survey (Febr. 1997)
 - 3 - Dissertation Adhikari (1996)
 - 4 - RRA - Village Study (Dec. 1996)
 - 5 - Traffic Survey (Febr. 1997)
 - 6 - Trader Survey (March 1997)

0 10 km

Source: Trekking map - Annapurna Conservation Area 1 : 125 000, published by ACAP, 1988

Cartography: H. Nischk

Map 2

labour migrants were employed in the urban areas of Nepal or in India, in relatively low income and insecure employment. A minority were in more secure employment, in India or elsewhere. In the terai, 10 persons were reported to be in public service and two were in military service (87 households); in the hills, the figures were 32 for public service and 10 for military service.

The cross tabulation of the number of migrant workers with the number of months of food self-sufficiency is interesting. In the terai, 15-20 per cent of households had food self-sufficiency for six months or less. Though more than 25 per cent of migrants came from this group, one household accounted for four out of the nine migrants. In the hills, half of the households surveyed had food self-sufficiency for six months or less; 40 per cent of migrants (18) were from this group; but the households with three and four migrants both had 12 months food self-sufficiency. This suggests that food self-sufficiency is not simply correlated with migration.

But it does seem that: 1) income from off farm employment migration allows some households to achieve greater food security as a livelihood goal; and 2) greater food self-sufficiency allows households to invest the necessary resources to successfully release migrants and diversify livelihoods.

Livelihoods at Risk: Coping Strategies in Remote Mountain Villages of Western Nepal³

To put the finger on the ecologically and economically most critical regions, one case study was selected in Nawalparasi District which is situated in the transition zone between the Terai and the Siwalik Hills, and another in Kaski District located in the transitional zone between Pokhara Basin, Middle Mountains and High Himal (Map 2). In both study areas, three to five villages were selected for intensive study. These villages were chosen to represent the remotest villages with highly fragile ecological settings and relative market unaccessibility.

Four specific steps were undertaken in the research process which was deliberately designed as a "bottom-up" approach along the food chain (for locations of the samples see Map 2):

- First step was PRA food self-sufficiency ranking of all village households (identification of Food Self-Sufficiency Categories, FSS), supplemented by Social Mapping and Resource Mapping exercises.
- On village level, a stratified sample survey of all food self-sufficiency classes was undertaken by means of questionnaires, representing 25 - 35% of all households of each village.
- By means of a traffic survey on nodal points in the mountainous food path system, village people who were on their way to or from the market were surveyed by a short questionnaire.
- At the roadheads of the food path system, where bazaars have been established, a trader survey was conducted taking into account approximately 50% of all traders.

In the Kaski case study, 41% of all households were less than six months self-sufficient from own food production, while 51% were self-sufficient less than 12 months. Only 8% had food surpluses. Compared to this, the food self-sufficiency situation in the Nawalparasi case study (Action Aid Nepal data) was even worse. Here 68% of all households could not sustain themselves for at least six months in a year, while 31% were food self-sufficient between 7 - 12 months; only 1% of the households had food surpluses. (Table 1).

When calculating the consumption level, minimum food requirement has been assumed as 180 kg of cereals per person/year (which is the WHO-Standard; in comparison to other estimates, this is an absolute minimum amount). In one of the villages studied, the actual consumption level was only 86% of minimum food requirements, in the other it was even only 82% (Table 2). The figures reveal that, in addition to own production, purchase and bartering of food are the main strategies to cope with food deficits, and that another coping mechanism which is forced upon the people is to consume less than the minimum requirement needed for an active and healthy life. So it is not surprising that large parts of the population in the mountains are apparently highly affected by stunted growth, although most of them are highly active and hard working.

Table 2 also shows that most of the food deficit is filled by purchasing food in the market. One source of income to do so is wage employment in agricul-

³ This case study was supported by a grant from the German Research Foundation (DFG), which is gratefully acknowledged.

Tab. 1: Food Self-Sufficiency: Classification and Extent
Nawalparasi Case Study (4 Villages)

FSS Groups	No. of hh	%	%
0-3 months	37	22	
4-6 months	78	46	68
7-9 months	39	24	
10-12 months	11	7	
> 12 months	1	1	32
all	166	100	100

Range between villages: 77%-23%
55%-45%

Kaski Case Study (2 Villages)

FSS Groups	No. of hh	%	%
0-3 months	26	14	
4-6 months	52	27	41
7-9 months	48	25	
10-12 months	49	26	
> 12 months	15	8	59
all	190	100	100

Range between villages: 67%-33%
33%-67%

Source: own survey, Adhikari/Bohle 1996/97

ture, in quarries and, most importantly, in portering services. Alternatively, mountain produce such as timber, livestock, bamboo and also alcohol are taken to the market. These are all products for which remote mountain villages have comparative advantages: Extensive grazing grounds are available in high pastures or forest mountains, so that elaborate transhumance systems can evolve. Timber which is illegally cut in the mountains is sold in the market, which is done at night to evade ranger controls that would prosecute any illegal access to the forests. Alcohol production, although also illegal, needs a lot of firewood for the distilling process. The production and marketing is mainly undertaken by non-Hindu women who sell the alcohol in lower lying villages where they buy the millet which is required for the production of alcohol. Bamboo which is collected in the forests is another produce which provides income in the form of baskets and mats that are manufactured in the villages and marketed in nearby bazaars and urban centres.

The working hypothesis of the study was that the extent of own production would largely determine the vulnerability and livelihood security of the individual household. However, the structure of vulnerability was found to be much more complex than being based on subsistence level alone. This becomes clear when the data are disaggregated to the level of the individual household (Figure 1). In the case of Karuwa-Kapuche, there is a tendency that households with low food self-sufficiency are also highly deficit in total food consumption. This is graphically represented on the lower axis of the figure. However, in the upper categories of food self-sufficiency, deficits and surplus conditions occur without any significant correlation to the respective subsistence level. In these cases, the specific coping strategies of the individual household are the key factors. There are clear indications that success or failure of these coping strategies is determined by the size of the household (the smaller, the more successful), and that there is also a strong tendency that the resource base of the indi-

vidual household is determined by caste and ethnicity. Other key factors that account for success or failure of securing a livelihood (measured by food consumption levels) are the demographic structure of the household (proportion of unproductive household members; proportion of males/females) and, most importantly, the health status of the family. It becomes clear from Figure 1 that it is not the exposure to risk alone (in terms of resource base or subsistence levels), but that the coping strategies which combine in a complex manner for each and every household are the main determinants of livelihood security or insecurity.

When Chambers (1989) defines vulnerability, he distinguishes between two sides of vulnerability, an external side which means exposure to stress, shocks and risks, and an internal side which means the capacity of people to successfully cope with these risks, stress and shocks. These two determinants of vulnerability also clearly evolve from the present study of livelihood security in rural Nepal. As a conclusion, it can be stated that access to life chances

is decisively determined by the strategies which are adopted to cope with food deficits and uncertainty. While the external side of vulnerability has mainly been examined from a macro-perspective of human ecology, entitlement theory and political economy (for a detailed theoretical discussion of vulnerability see Watts and Bohle 1993), the internal side of coping has to be analysed from a micro-perspective. It is one of the most important findings of this research that unsustainable development - being ecologically, economically, and socially determined - can only be made operational and visible on the local level, last but not least on the level of individual households. Such a micro-perspective of coping with vulnerability is certainly a domain of, and a challenge for cultural geography and anthropology. Figure 2 represents a first attempt to integrate both the external and internal sides of vulnerability into the theoretical discussion of vulnerability.

Case Study II: Determinants of Food Security in Southern Tamil Nadu/India⁴

Economic Development and Social Opportunity in India

In their book on "Economic Development and Social Opportunity in India", Drèze and Sen (1995) present an analysis of endemic deprivation in India and address the role of public action which has been quite limited in eliminating this problem. They argue that this failure is largely due to a monumental neglect of social inequalities and deprivations in public Indian policy. The central challenge of economic development in India, in their view, is the need to expand social opportunities. By social opportunities the authors mean expansions of basic human

⁴ This case study has been undertaken in close collaboration with Mrs. Susanne van Dillen, University of Freiburg, who conducts a research project on "Livelihood Security, Mobility and Reach" in the Nellai Kattabomman District of Tamil Nadu. Her cooperation is greatly appreciated.

Tab. 2: Sources and Consumption of Food

Siding Village

FSS	Required*	Produced	Purchased	Sold	Bartered	Consumed
0-3 months	100%	21	50	-	-	71
4-6 months	100%	44	31	-	10	85
7-9 months	100%	51	23	-	2	76
10-12 months	100%	78	19	2	2	97
> 12 months	100%	127	14	40	-	101
all	100%	62	25	4	3	86

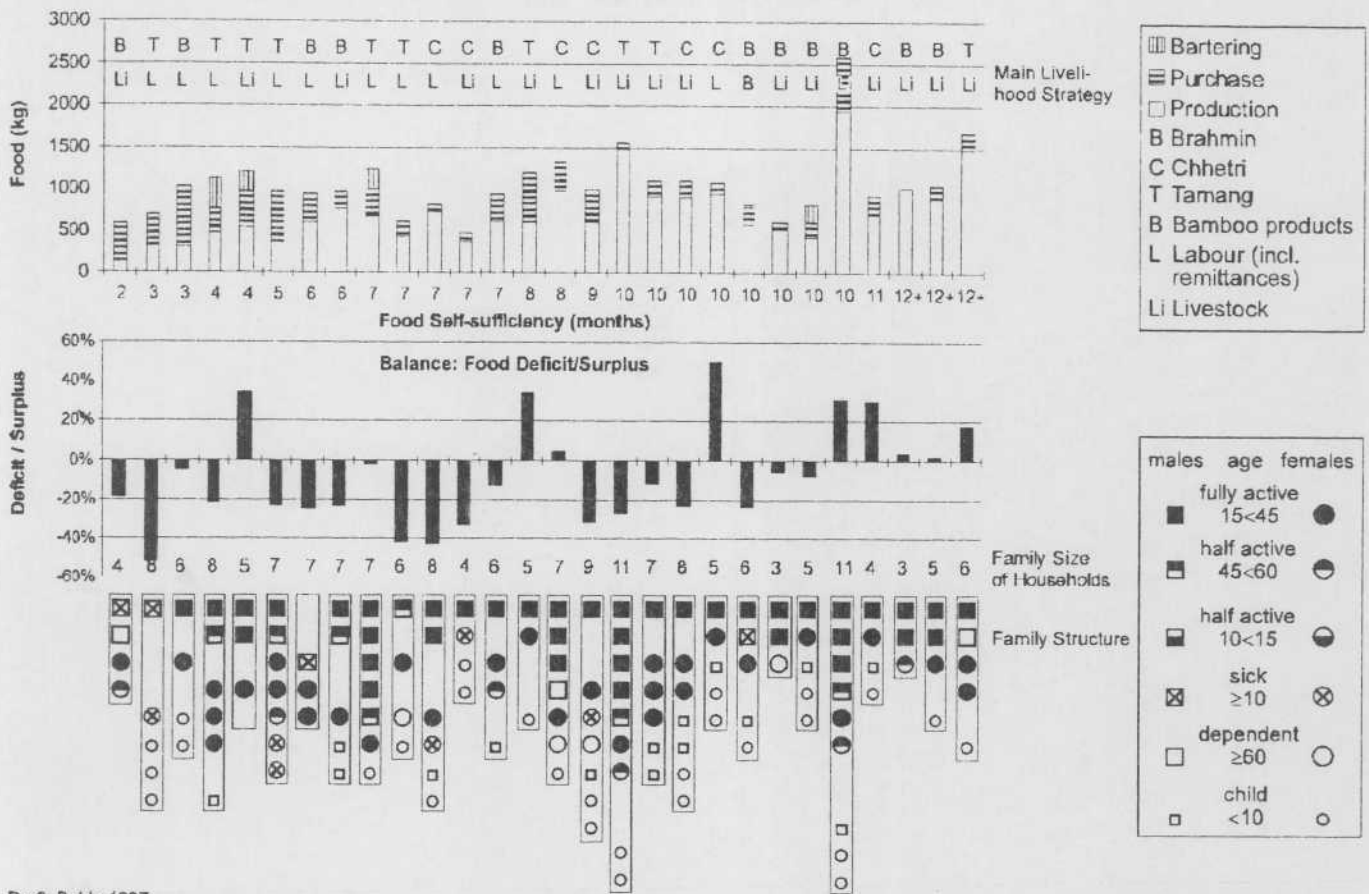
Karuwa-Kapuche Village

FSS	Required*	Produced	Purchased	Sold	Bartered	Consumed
0-3 months	100%	16	45	-	-	61
4-6 months	100%	39	45	-	7	80
7-9 months	100%	57	31	-	2	75
10-12 months	100%	88	31	-	-	118
> 12 months	100%	-	-	-	-	-
all	100%	47	41	-	5	82

*Food requirement has been assumed as 180kg per person per year (WHO-standard, minimum amount)

Source: own survey, Adhikari 1996/97

Fig. 1: Livelihood Profiles in Siding Village in 1996



Draft: Bohle 1997

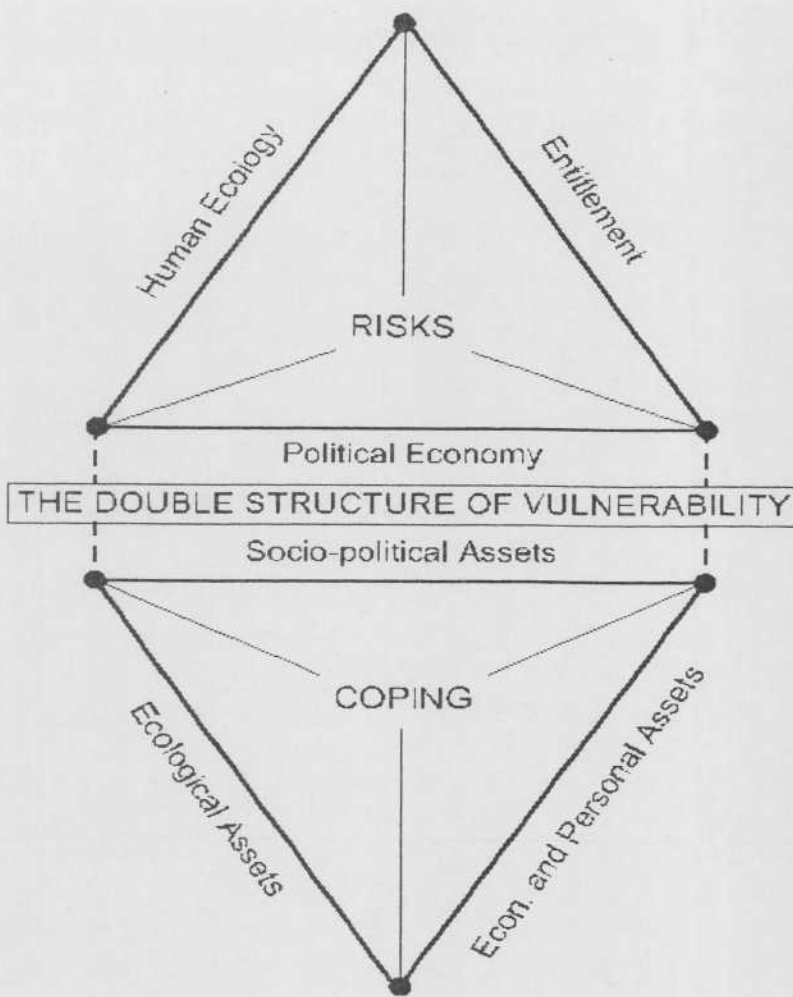
capabilities, including such freedoms as the ability to live long, to read and write, to escape preventable illness, to work outside the family irrespective of gender, and participate in collaborative as well as adversarial politics. The scope of social opportunities not only influences the quality of life that the Indian people can enjoy, but also affect the real opportunities they have to participate in economic expansion (Drèze and Sen 1995 p. VII). As the central building-blocks for social opportunities, the authors identify the promotion of basic education, health services, and social security (p.V, p.8).

India is the country with the world's second largest population. It inhabites about 1 billion people, one third of them live below the poverty line which is fixed according to a quantitatively and qualitatively sufficient diet. About 350 million people are in absolute poverty, many of them go hungry every day. 646 million people have no access to sanitation. In 1992 3,2 million children died before the age of five years (Agarwal/Varma 1996), just to name some basic indicators on well being and deprivation. India, however, did manage quite well in economic terms during the last three decades, especially if we look on food production. In 1966 the country produced about

63 million tonnes of foodgrains, while more than 10 million tonnes of cereals - mainly wheat - had to be imported. In 1995 about 175 million tonnes of foodgrains were produced, only 65.000 tonnes of cereals were imported, but about 5 million tonnes of rice were exported. India that has been a food deficit country in its first decades after independence has thus turned into an important food exporting country. It is however an illusion to think that the tremendous growth in agricultural production eradicated hunger and malnutrition.

To summarize: India is still a country in which millions of people are miserably poor, but at the same time India is also a country where a growing number of people are quite rich even by international standards. There are huge regional as well as social disparities which are widening, thus causing severe internal conflicts. While there are many provisions for social security for the employees and their families in the formal sector, there is no such system in the informal sector. Many formal security schemes however lack accountability and offer wide scope for corruption. On the other hand, they provide cheap primary health facilities and subsidized food. In the informal sector, networks comprising of family members, neighbours,

Fig. 2: The Social Structure of Vulnerability



Draft: Bohle/Mayer 1997

friends and members of the same caste have prominent security functions. However, they are very complex and difficult to analyse.

The Case Study

The case study on "Social Security Systems and Vulnerability in Southern India" empirically addresses problems of deprivation and social insecurity, by focussing on the state of food security of village people and their opportunities to cope with food-related risks. It is a local-level investigation of three villages in the southernmost part of India. The field survey has concentrated on the structure of rice supply to various social groups of the villages concerned, with special emphasis to the specific state of food security in regions of diverging socio-economic and ecological conditions. The study has thus selected three villages close to the district headquarters of Tirunelveli, which are clearly distinguished by their ecological, economic and socio-economic contexts. This region has suffered from severe drought in 1996 and 1997. Drought conditions have accentuated

the risks and vulnerabilities which have been predominant in these villages for a long time, but its impact has been rather specific according to the ecological and agrarian situation of the respective village.

One of the villages (TM) is situated within the irrigation system of the Tambraparni basin, where intensive paddy cultivation is possible with two harvests per year. The highly productive cultivation is based on the perennial canal irrigation of the Tambraparni river. Contrary to this, the other two villages are situated outside the river basin and are highly dependent on local rainfalls. One village (KOD) is solely based on rainfed agriculture; traditionally, cultivation has been supported by well irrigation. However, drought conditions during the last two years have resulted in a severe decline of the groundwater table, leaving many of the traditional wells dry, with severe effects for agricultural productivity. A third village (MAV) has always been fully dependent on rainfed agriculture. Due to adverse hydrogeological condi-

tions, well irrigation has always been very limited in this village.

An intensive survey of 152 households has supplied detailed information on the current structure of rice supply to various social groups of the three villages and on the coping strategies employed by village people in case of food deficits. The results of this study are summarized in Table 3. The questionnaire data on food supply and food consumption in the three villages show a number of interesting features on the state and scope of food security.

Major Findings of the Case Study

A first result is that the degree of self-sufficiency in food is closely correlated to the local agrarian production system. As the two villages which are not covered by reliable irrigation systems have badly suffered from the severe drought conditions during 1996/1997, food supply in these villages has been extremely low from own production. In KOD, it was only 7% of total consumption, in MAV it was even just 4%. Contrary to this, food supply from own

Tab. 3: Production, Consumption and Expenditure Patterns of Grain in Three South Indian Villages, 1996/97

Village	Sex	Age	Demography		TOTAL CONS. (kg/hh/a)	Own Production		PDS (legal)			PDS (illegal)			Open Market			Kind Payment		
			♂ hh Size	males per 100 females		kg/h/a	% of total cons.	kg	cons. (%)	exp. (%)	kg	cons. (%)	exp. (%)	kg	cons. (%)	exp. (%)	kg	cons. (%)	exp. (%)
TM (intensely irrigated)	T	47	4.4	108	728	404	55	188	26	80	3	-	16	2	18	117	16	-	
	F	29	4.8	108	763	655	86	57	7	55	nil	nil	17	2	45	34	4	-	
	LL	18	3.9	104	670	nil	nil	400	60	90	7	1	2	2	8	250	37	-	
KOD (rainfed with rice miltances)	T	52	3.4	72	456	34	7	345	76	65	nil	nil	70	15	33	6	1	-	
	F	30	3.7	82	506	60	12	362	72	64	nil	nil	74	15	33	10	2	-	
	LL	22	3.0	59	389	nil	nil	323	83	66	nil	nil	64	16	33	2	1	-	
MAV (rainfed with mil grant agr. lab.)	T	53	4.3	96	638	28	4	276	43	38	159	25	87	14	32	82	13	-	
	F	31	4.3	96	650	47	7	291	45	42	195	30	51	8	20	64	10	-	
	LL	22	4.2	92	605	nil	nil	254	42	33	107	18	138	23	48	105	17	-	

T = Total, F = Farmers, LL = Landless
PDS = Public Distribution System
Cons. = Consumption, exp. = expenditure

Source: Field Survey, E. Weber 1997

Draft: H.-G. Bohle

production covered 55% of the demand in the intensely irrigated "wet" village of the Tambraparni basin. The question arises of how village people could cope with this adverse situation, and which strategies they developed to address the existential problem of food insecurity under these conditions.

One of the very basic sources of supply for food-deficit villages is the public distribution system. In MAV, 43% of the food supply comes from public ration shops, and in KOD this proportion is as much as 76%. Even in the intensely irrigated third village, households who do not own sufficient land are basically dependent on the public distribution system (60% of the consumption). In one of the villages (MAV), "illegal" supply from the public distribution system plays another important role. Here, due to favourable traffic links to Tirunelveli town, village people get ration cards from urban middle-class households who sell their cards to the villagers. Although they have to pay for these cards, they still get the cheapest rice quality at about 70% of the current market price. 43% of the rice consumption in this village is thus covered by "illegal" food supply from urban ration shops.

Another important source of food supply is kind payment of rice to small farmers and landless labourers, both women and men. This source is crucial for the landless in the irrigated village (37% of food supply), but also relevant in the case of the rainfed village of MAV where a considerable proportion of the landless work as migrant agricultural labourers in neighbouring villages (17% of food consumption).

Contrary to these sources, open market supplies do not play a major role in any of the three villages investigated. Even in the "dry" villages with high food deficits, the proportion of consumption from open market sources is only 15 and 14% respec-

tively; the high cost of open market food, however, means that around one third of the total food expenditure in these villages has to be spent in the open market.

In the ecologically most disadvantaged village (KOD), new strategies of food supply include out-migration of young male workers to the Near East. Their remittances are of existential importance for the food supply of the remaining household members.

These findings have several major policy implications. One is the high dependence of low-income village people on the public distribution system, which is even high in intensely irrigated rice economies. The current discussion on the restructuring of the Indian public distribution system, its cut down or even abolition, has to be viewed very critically from this vantage point. The study has also revealed that kind payments are of vital importance for landless labourers. Recent proposals that seek to prohibit kind payments for landless labourers under the new "Minimum Wages for Agricultural Labourers Act" would severely cut down this source of survival. The fact that males and females are equally remunerated with kind payments during harvest times means that there would be an additional gender bias through the reform of the Minimum Wages Act which would adversely affect female labourers. These few examples demonstrate that the internal structure of food supply and food security in villages of diverging ecological and socio-economic contexts has to be further researched, in order to reveal the impact of public policy on households with low income and high vulnerability. This case study thus also shows that, theoretically and conceptually, both questions of exposure to risk and coping with risks in food supply have to be addressed simultaneously.

Case Study III: Food Security and Regional Planning in Southern Sri Lanka

Marginalization and Regional Planning in Southern Sri Lanka

The present case study concentrates on an extremely poor district in the dry region of southern Sri Lanka where food insecurity and joblessness for young people are the most severe problems. Both are indicators for a persisting marginalization of rural areas in the South. This has already provoked two violent youth movements and is still perceived as a

threat to the socio-political stability of the country. Accordingly, the state has initiated new regional planning efforts for the South, focusing on urban development and rural industrialization. One of the outstanding projects was the establishment of the Southern Development Authority (SDA) by the President in 1995. A key component of the actual Masterplan is the creation of a new international city, spanning 68.000 ha in the dry zone of the Hambantota district, together with an international seaport and an international airport in the vicinity (SDA 1997). The villages selected for this case study are located in the area of the proposed new mega-city, thus giving the possibility to critically reflect on the possible impact of such a development in the region.

The present case study investigates, on a local level, the state of food security, especially for children, for whom the problem of malnutrition is most serious. UNICEF (1997) has estimated that 36% of Sri Lanka's pre-school children are stunted, that 18% are wasted and 5% suffer from both problems, which is a serious state of malnutrition. Especially stunting is considered an indicator for chronic food deficit, illness and basic poverty (Weingärtner 1997, p. 17). Although stunting appeared to be on a downward trend between 1987 and 1993 (from nearly 28% to 21%), over the last years it has significantly increased again with the occurrence of stunting being 15% higher now than in 1993 (Gunasekera 1996). The rural South is one of the most severely affected regions in Sri Lanka.

Although Sri Lanka is recognized as a "welfare model", emphasizing a high level of social security for everyone and being famous for its good social indicators like high rates of life expectancy and literacy and low rates of infant mortality (see HDR 1997), malnutrition among children is still prevalent. The question arising from this paradoxical situation is to what extent this indicates deprivation and marginalization among the rural population and if it indicates a lack of care from the side of the parents. On a very limited scale the project tries to get some ideas on these assumptions in order to indicate areas for further research, which will then help to formulate adequate planning and policy strategies for addressing the problem of malnutrition in the South.

Research Design

Together with young scientists from the University of Colombo two village studies were undertaken to investigate various factors possibly influencing

the nutritional status of children. For this case study one settlement under an irrigation scheme was chosen and one traditional village without access to an irrigation scheme, both located in the dry zone of the Hambantota district in Southern Sri Lanka. The field survey started with extensive interviews and group discussions with key informants like local leaders, representatives of state or non-governmental organizations working in the villages, local business people, teachers, priests, doctors, social workers, elder farmers, and selected mothers. In a second step the field survey concentrated on a livelihood analysis of 10 households with malnourished children and 10 households without malnourished children in each of the two selected villages, thus adding up to a total sample of 40 tested households. The main results are as follows (see also Table 4).

Scarcity of resources and market problems:

In both villages it is quite obvious that there is a correlation between limited resources and child malnutrition. Households with malnourished children show relatively poor housing conditions (and housing respectively is also perceived as a main problem in nearly all of these households) and a large family size. They are usually not able to cultivate paddy and generally they do not have the possibility to sell anything for additional income. Out-migration of family members to seek employment is high in both villages, but more pronounced in the traditional village, where the local resource base is even more limited. Taken into account that employment is regarded as the most pressing problem in households affected by child malnourishment, it becomes obvious that subsistence cultivation alone is not enough to secure a proper living and to avoid household food insecurity. This is especially the case when the household is without own paddy fields. Consequently, in the irrigation settlement child malnutrition is more frequently present in families who moved to the settlement recently and are therefore not entitled for a plot of paddy fields under the irrigation scheme, whereas in the traditional village the possibilities to cultivate paddy are generally limited. For those who are cultivating paddy lack of water is perceived as the main problem as this is threatening directly their base of security.

The empirical findings also show correlations between market problems and child malnutrition. Firstly, the possibility to keep food stores signifi-

cantly improves the food security of a household. Food storage is mainly used for cash crops from dryland cultivation like chillies or green-grain, because prices during the harvest season are extremely low whereas farmers who are able to store their product for some time can get much better prices. This market dependency has become more pronounced as dryland cultivation has shifted from subsistence to cash crop production over the last ten years. Secondly, over the last four years producer prices are constantly going down in combination with unchanged or even increased consumer prices, mainly due to the growing dominance of middle men. Consequently, all households depending mainly on cash crops have a much higher incidence of malnutrition. The constant complaint by some economists that Sri Lankan farmers are not willing to give up rice production for more productive crops must be seen quite critical because rice production provides at least some kind of basic food security. This becomes obvious when looking at the fact that market problems are generally more pronounced in the traditional village, where people are more market-oriented due to the lack of rice cultivation. Finally, nearly all households in both villages have access to credits, but this doesn't have any impact to avoid child malnutrition. These are mainly small credits given by NGOs or state organizations, but as long as the local resources are basically very limited and the market is not functioning properly, it might be difficult to make use of these credits in a meaningful way.

Child care and social disintegration:

The overall picture regarding child care is basically positive in both villages and for all households, whether they have malnourished children or not. Health facilities in both villages seem to function quite well. None of the households had been affected by any major illness over the last years, all children were covered by vaccination, and nearly all mothers are breast-feeding their children during the first months. There are well-functioning schemes to distribute milk powder and vitamins to pregnant women. There also seems to be no gender discrimination in regard to food distribution for children. Malnutrition is equally present among girls and boys.

A critical area regarding the nutritional status of children might be the diet composition. With rice and vegetables as the most important food items consumed by all the village people it is of some interest

Tab. 4: Causes of Child Malnutrition

	Bandagiriya <i>settlement with irrigation scheme</i>		Galwewa <i>traditional village without irrigation</i>	
	Sample of 10 households without stunted children	Sample of 10 households with stunted children	Sample of 10 households without stunted children	Sample of 10 households with stunted children
Scarcity of resources	<i>out of 10 cases</i>	<i>out of 10 cases</i>	<i>out of 10 cases</i>	<i>out of 10 cases</i>
Poor house condition	1	10	2	9
Number of children more than 2	3	7	2	8
Household not able to cultivate paddy	2	9	4	8
No possibility to sell anything	4	10	3	7
Market problems				
No possibility to keep food store	2	6	1	8
No access to credit	1	5	1	-
Dependence on cash-crops	3	6	2	9
Social disintegration				
Parents without basic education	-	5	3	8
Labour migration of mother	6	2	5	8
No village institutions of importance	7	9	8	10
Most important food for the household	1. Rice 2. Vegetables 3. Milk/ Curd 4. Sugar	1. Rice 2. Sugar 3. Vegetables 4. Coconut	1. Rice 2. Vegetables 3. Milk/ Curd 4. Sugar	1. Rice 2. Vegetables 3. Coconut 4. Sugar
Major problems of the household	1. Water 2. Employment 3. Electricity 4. Food 5. Health	1. Employment 2. Housing 3. Water 4. Food 5. Health	1. Water 2. Employment 3. Electricity 4. Housing 5. Land	1. Employment 2. Housing 3. Water 4. Electricity 5. Food

Source: Field Survey, M. Mayer 1998

Draft: M. Mayer

that the families without malnourished children have mentioned milk and curd as very important for their food consumption, whereas households with malnourished children do not mention this at all. As protein deficit is one factor causing child malnutrition, the creation of awareness of locally available and affordable sources of food containing sufficient protein would be a vital component of any nutrition improvement program. Furthermore, it is also important to note that education of parents seems to have an impact to avoid child malnutrition, creating awareness about a proper diet composition.

More serious problems of child care seem to arise from the labour migration of mothers, although the situation in these cases is complex and depends on the individual family situation. An outstanding feature in Sri Lanka is the high percentage of female labour migration. Since the early 90's the participation of women has exceeded that of men significantly (83.5% in 1994; Ruhunage 1996, p. 4). Female migration is triggered by the demand for housemaids in the Middle East and for female garment factory workers, especially in the Free Trade Zones located around Colombo. One of the crucial factors regarding the absence of the mothers is the question of who is responsible for the care of the children. Especially when the mother is abroad, observations in the villages are indicating that the children's education is declining and that the fathers are more prone to alcoholism with very negative effects on child malnutrition. The children's care is thus the crucial factor deciding whether the additional income earned by the mother abroad has a positive impact on the food supply of the family or not.

Another point worth mentioning is the overall perception of nearly all the interviewed households that there is not a single village-based institution of importance for them, whether it is state-run or based on traditional self-help mechanisms. The family thus becomes the most important reference group, especially in times of crisis. The increased demand for labour migration and the related danger of disintegration even of nuclear family structures must be considered very serious in this context, as it is threatening the last reliable source of mutual support.

Recommendations:

Keeping in mind the limited scale of the empirical survey, the following comments nonetheless can be made:

- Child malnutrition seems to be closely related to household deprivation, which is more widespread than expected in the context of the Sri Lankan social security model. The welfare programs since 1994, focusing on income transfers only, might be less adequate to secure food security of marginalized households than food-based assistance, which was the major element of the welfare-oriented policies before 1994. In how far the Sri Lankan model is still of any relevance at all, especially after the enforced open market policies since the early 90's, would be an urgent research area.
- Cultivation is seriously limited in the southern dry zone of Sri Lanka due to lack of water. This situation has become more serious over the last years with an increase of droughts and population pressure. Even in the settlement with an irrigation scheme only one harvest per year is possible due to scarcity of natural resources. Although nearly every household in both villages owns at least a small plot of land, all households depend on some income flow from outside for their everyday survival. On the other hand, even limited chances to cultivate paddy for one's own food consumption contribute significantly to the state of food security of children. The improvement or at least protection of the natural resource base for cultivating food crops would be thus another field for further research.
- There is no significant difference between the irrigation settlement and the traditional village regarding the incidence of factors correlated with child malnourishment, which underlines that the problem of resource scarcity that leads to food insecurity exists also in an irrigation settlement. The only difference is the total proportion of affected children: in the irrigation settlement only 8% of the children under 5 are stunted, whereas in the traditional village the number goes up to nearly 20%.
- It is also obvious that external, non-agricultural resources are getting more and more important for household livelihood security. Provision of locally available opportunities for productive employment to marginal households can thus be regarded as an important contribution to solve the nutrition problem. But keeping in mind that agriculture

still provides the base for local food security it is important that such strategies are not further deteriorating the natural resources. Any regional development plan should therefore be twofold: to protect subsistence production and also to promote additional employment possibilities. It is doubtful if mega-projects like a new city can fulfill these demands without worsening the conflict among rare resources like water and food in the South. A promotion of existing small and medium towns might not only be ecologically more suitable, but from an economic point of view it might even cover a larger population in a faster and more sustainable way. Research on employment aspirations, especially among the educated rural youth, and employment possibilities to be promoted through an urban system would also be an area of urgent research. This will be one important focus of a National Youth Survey in Sri Lanka, which will be conducted by the Centre for Anthropological and Sociological Studies, University of Colombo and the South Asia Institute, University of Heidelberg, with the support of UNDP and the Friedrich-Ebert-Foundation.

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