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CONTENTS

1. EXECUTIVE SUMMARY	1
2. BACKGROUND	2
2.1 The goal of the project.....	2
2.2 How the project built on previous work to derive ‘new knowledge’	3
2.3 How demand for the project was identified.....	4
3. PROJECT PURPOSE.....	7
4. OUTPUTS	7
4.1 Output 1: Current state of knowledge on livelihood systems in semi-arid Tanzania comprehensively explored, factors shaping livelihood and coping strategies analysed, and key knowledge gaps identified.	7
4.2 Output 2: Current state of knowledge on poverty scoped, and contextualised in terms of semi-arid livelihood systems.	13
4.3 Output 3: Partnerships with key Target Institutions established and demand for new livelihood options confirmed.	16
4.4 Were all anticipated outputs achieved and if not, what were the reasons?	17
4.5 What else needs to be done to take the research results forward?	17
5. RESEARCH ACTIVITIES	18
5.1 Description of research activities.....	18
5.2 Facilities, expertise and special resources used to implement project	20
5.3 Modifications to the proposed research activities.....	20
5.4 Extent to which planned inputs achieved	21
5.5 Special activity achievements.....	21
6. CONTRIBUTION OF OUTPUTS	21
6.1 Contribution of outputs towards NRSP's goals.	21
6.2 Assessment of the extent to which the OVs at the Purpose level were attained.....	22
6.3 Assessment of the impact of the project on thinking.	22
6.4 What else needs to be done to promote new-found understanding.....	23
7. COMMUNICATIONS MATERIALS	23
7.1 Completed reports	23
7.2 Planned publications.....	24
8. PROJECT LOGFRAME	25
9. KEY WORDS	28
10. ANNEXES	28
11. REFERENCES.....	28

Abbreviations used in this report

ASC	Afrika-Studiecentrum
CPR	Common Pool Resources
CS	Case study
DFID	UK Department for International Development
DONET	Dodoma Environmental Network
FARMESA	Farm Level Applied Research Methods for East and Southern Africa
FTTP-TZ	Forest, Trees and People Programme - Tanzania
HADO	Hifadhi Ardhi Dodoma
HH	Household
IRA	Institute of Resource Assessment
KEA	Kondoa Eroded Area
MBOMIPA	Matumizi Bora ya Maliasili Idodi na Pawaga
NGO	Non governmental organisation
NPES	National Poverty Eradication Strategy
NRI	Natural Resources Institute
NRs	Natural resources
NRSP	Natural Resources Systems Programme
ODA	Overseas Development Administration
PAMs	Poverty Aim Markers
SAPS	Structural Adjustment Programmes
SCF	Save the Children Fund
SL	Sustainable Livelihoods
SUA	Sokoine University of Agriculture
TIs	Target Institutions
URT	United Republic of Tanzania

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1. EXECUTIVE SUMMARY

The *purpose* of the project is to gain a *comprehensive understanding of the assets and livelihood strategies available to and undertaken by the poor in semi-arid Tanzania, together with the factors that have shaped those strategies including social and economic change and the transforming structures and processes*. This understanding is viewed by the Natural Resources Systems Programme as the first of a two-stage process, in which new knowledge and established local partnerships would provide the platform from which to develop and enable poor people to adopt a range of livelihood enhancing options.

The *Outputs* selected to realise this purpose and provide alignment with the second phase, are:

1. Current state of knowledge on livelihood systems in semi-arid Tanzania comprehensively explored, factors shaping livelihood and coping strategies analysed, and key knowledge gaps identified.
2. Current state of knowledge on poverty scoped, and contextualised in terms of semi-arid livelihood systems.
3. Partnerships with key Target Institutions established and demand for new livelihood options confirmed.

Activities associated with outputs 1 and 2 ran in parallel. General literature on livelihood approaches and poverty were reviewed, together with material specific to semi-arid Tanzania. The initial analysis and elaboration of issues influencing livelihood strategies and defining poverty were shared in seminar with target organisations. This was supplemented by additional case study material and fieldwork. The emerging findings were again tested in a workshop with the target institutions. Realisation of output 3 hinged upon strategic engagement with target organisations; activities included examination of published materials, semi-structured interviews, and workshops.

Recent poverty indicators suggest that deprivation is on the increase in Tanzania, with more than 56 percent of the population below the basic needs poverty line. Agriculture, directly or indirectly, remains important to the wellbeing and livelihoods of all in the semi-arid areas. The findings suggest that rural households are engaged in different and multiple livelihood strategies, including agricultural intensification and extensification, diversification and migration. These processes are being driven by widespread processes of social change.

Poorer households lack the threshold assets associated with many diversification strategies and are only partially self-sufficient in food. Survival dictates that they engage in non-specialist labour (on- and off-farm) and make use of off-farm natural resources to offset food deficits. Such activities do not enable strategic improvements in their lot, while repeated exposure to crises increases their vulnerability to shocks and down turns, and creates a poverty trap. The poor are least able to influence external events, discrimination exposes women to greater risks of poverty, and the children of the poor receive less education perpetuating aspects of vulnerability.

Livelihood determinants associated with the mediating environment include SAPS, diminishing governmental support for agriculture, uncertain market environments, poor local labour markets, absence of informal credit, corruption, the waning of traditional institutions, the individualisation of economic activity and commoditisation. Contextual factors (i.e. trends and shocks) include land degradation, declining fertility and yields, increased conflict associated with CPRs, droughts and floods, epidemics, and population trends.

Key areas identified for future research include:

- Increasing agricultural productivity and value through pro-poor technologies that build upon farmers' knowledge and practices.
- Impact of the draw of labour to mining (and tourism), on household production and the lives of women and children.

- The characteristics of households that successfully move from coping to accumulation.
- How can access to information, knowledge and technologies be improved, and be better aligned to meet the needs of the rural poor.
- Environmental impact of increased legal and illegal use of wild natural resources / CPRs.
- Pro-poor credit policy and mechanisms.
- Management options to address the impact of increasing traditional, small-scale irrigation on down stream water users, especially hydropower and the environment.
- What new local institutional arrangements are emerging in response to the changing NR policy context.

In order to deliver new knowledge that enables poor people, largely dependent on the NR base, to improve their livelihoods (the NRSP purpose), then it is first necessary to understand the current nature of their livelihoods and the cause of their impoverishment. The project has developed knowledge and understanding in both these areas. The project also goes some way to unpacking and identifying trends in the contribution made by natural resources to the livelihoods of the rural poor.

The *Objectively Verifiable Indicator* at purpose level is that: *by mid 2001, an ascendance of pro-poor policy formulation, programme and project designs, relating livelihoods and sustainable NR management, in the deliberations of key government and other target institutions.* While attribution is not without problems and it is yet early days - the project timetable suffered from unavoidable slippage - to say whether the project has made a significant contribution to this *OVI*, it has undeniably raised levels of understanding amongst key players on issues linking the livelihoods of the poor and natural resource management. It has also highlighted the arguments framed by livelihood approaches for poverty reduction.

2. BACKGROUND

2.1 The goal of the project

The project's goal is to realise the development and promotion of sustainable livelihood strategies for poor rural households in semi-arid systems. Prerequisites to realising this goal include developing an understanding of the existing livelihood systems of the poor, and of the factors that shape these systems.

The project has given particular emphasis to building and sharing understanding with local collaborators and selected target institutions (TIs). The TIs include those influencing the operating environment in which people's livelihoods are forged (e.g. planners and policy makers), and others in more direct support for initiatives undertaken by or involving local people (e.g. implementing agencies, NGOs). As such, not only will many of them have a wealth of experience and knowledge of existing livelihood systems, but also they are well placed to take up research findings and usefully incorporate them into the development process.

In order to establish a shared framework of understanding to underpin both the project's aims and future work supported by the NRSP, many of the terms and underlying concepts articulated in the goal (e.g. sustainable livelihoods, livelihood strategies, the rural poor, households, and semi-arid) required unpacking. The project aimed to accomplish this through multiple meetings and interviews, a seminar (see Annexes 1A, 1B, and 1E), and sundry communications with the collaborators and selected TIs, a process which would also lend itself to the sharing and gleaning of existing information. Researchable constraints and opportunities for future work supported by NRSP, would be revealed through the critical examination and synthesis of existing knowledge (Annex 1 and Annexes 1C and 1D), tested further through field work and validation by the target organisations (Annexes 1F and 1G).

2.2 How the project built on previous work to derive ‘new knowledge’

A great deal of research has been undertaken on production systems in the semi-arid areas of Tanzania and the surrounding region. The challenge facing this project was not to derive new knowledge per se, but as above, to review existing knowledge with respect to the implications for people’s livelihoods and notably those of vulnerable groups. This reassessment provides a platform of understanding, identifying knowledge gaps and constraints, in order to provide direction for future NRSP research.

2.2.1 Definitions and dimensions of poverty

Poverty has been conceptualised in many different ways. Whether defined in terms of physiological deprivation (e.g. income/ consumption poverty) or sociological deprivation (e.g. social exclusion) the challenge is to reflect its multiple dimensions and diverse contexts, and to overcome significant difficulties associated with its measurement (e.g. identifying suitable indicators). Different concepts of poverty moreover, imply different interventions.

The success or failure of any such intervention ultimately hinges on understanding the causes of poverty. While both the Natural Resources Systems Programme and Sustainable Livelihood approaches are articulated in terms of addressing poverty, there is an inherent tension between the holistic, people-centred approach of the latter and the natural resources and production orientation of the former. We have attempted to identify if not address some of the key constraints to building synergies between these different approaches.

In attempting to understand the causes of poverty in the context of the livelihoods of people in the semi-arid areas of Tanzania, the project has reviewed major reports and sources of poverty related literature (see section 4.2 below). The project explores poverty at the semi-arid area or zonal level, at the household level, and to some extent at the intra-household level. This has been done using secondary data, case studies from secondary data and case study field work. Some regional statistical data has been disaggregated to district level to better identify the overlap between physiological indicators of poverty and the semi-arid areas. Participatory poverty assessments, including work funded by the World Bank, have been incorporated to develop understanding of the vulnerability of rural people, and identify various discriminatory aspects of poverty to which blanket quantitative methods are blind. Semi-structured interviews and the workshops have also thrown light on the different perspectives held by target organisations on poverty, and on certain anomalies engendered by the international poverty agenda.

2.2.2 Semi-arid areas - definitional issues

The definition of semi-arid is widely acknowledged to be problematic. Difficulties are associated with both the existence of diverse definitions and their application in the literature to parts of Tanzania. Further difficulties encountered relate to the non-alignment between semi-arid areas and the administrative areas to which most secondary data refers.

For the purpose of this study we have been guided by the agro-ecological classification published by ODA/NRI (NRI, 1996), which identifies two distinct semi-arid resource zones in Tanzania, one in the central part of the country and another in the south east (see Map 2.1). Given the increased uncertainty associated with rainfall in the central zone, the more pervasive association between existing poverty indicators and regions in the central zone, the generally sparser rural population in the south-eastern zone (and presence of the Selous game reserve), and operational resource constraints, this project has predominantly focused on the central semi-arid zone.

The identification and selection of a relevant but manageable domain will almost inevitably leave out areas and aspects worthy of study. By eliminating the adjacent arid areas, predominantly Arusha Region, we have precluded consideration of those overlapping livelihood configurations that have evolved against the gamut of dry lands. These include for example, important aspects associated with the seasonal migration of the Maasai, and the

changing balance between cattle keeping and cropping along the semi-arid/arid continuum. Similarly, by excluding areas with annual rainfall significantly above 800 mm we are ruling out large areas of Tanzania from the analysis, and the overlapping livelihood interactions and options associated with people in those areas. Some case study material referring to localised semi-arid areas outside the periphery of the central zone has however been included.

In attempting to locate suitable material for this study, it became evident that for certain locations, particularly those associated with interventions, a large body of information exists. Conversely, there are many areas where little or no relevant information would appear to be available. Singida and Tabora regions, which have less favourable road networks and are less densely populated, appear to be relatively under-researched areas.

2.2.3 Livelihoods approaches - conceptual issues

In recognition of the multiplicity of rural lives, recent livelihood approaches de-couple the concepts of 'rural' and 'agricultural', moving the analysis beyond agricultural production systems alone. In opening up this bigger picture, it is anticipated that new entry points for the realisation of sustainable poverty reduction will be identified.

The project attempts to incorporate the main themes from the proliferation of material associated with the emergence of livelihood concepts. Section 2 of the synthesis report (Annex 1) defines household livelihoods, introduces the basic livelihood model and DFID's framework for livelihood analysis, and explores their key components. Various typologies for classifying livelihood activities and strategies are also presented and discussed.

This knowledge is then applied to a number of key studies and initiatives (see section 5.2 below) that have focused on people in the semi-arid areas, in order to interpret and better develop understanding of their changing livelihood patterns.

2.3 How demand for the project was identified

The purpose of DFID's country strategy paper for Tanzania is to achieve sustainable improvements in the livelihoods of poor people, with measurable impacts to include improved productive opportunities and their enhanced participation in the development process, by the end of 2002.

Even using the above, restricted definition for semi-arid, approximately twenty percent of the population are estimated (upwards of 5 million in 1998) to live in the two zones, the majority - 14% of the total - in the central semi-arid zone upon which this study focuses. Recent poverty indicators suggest that both physiological and sociological deprivation is on the increase, with more than 56 percent of the population below the basic needs poverty line (URT, 2000b). With semi-arid systems being subject to a high degree of climatic fluctuation, both on a seasonal basis and in terms of one-off unpredictable events (e.g. drought and floods associated with El Nino), the many resource-poor households in these areas are exposed to additional risks and vulnerability.

The TIs participating in the project recognise the vulnerability of groups in the semi-arid areas and many are expressly mandated to seek improvements in the wellbeing and livelihoods of such people. These include the poverty unit within the Vice-President's Office, which is responsible for the National Poverty Eradication Strategy (NPES), and seeks to build alliances and partnerships between different organisations to realise its poverty reduction objectives. Similarly the objectives of CARE and SCF(UK) relate to finding lasting solutions to the root causes of poverty and hunger, and both make active use of livelihood models in their work. Amongst local NGOs, INADES - Formation Tanzania for example, seeks to enable local groups of farmers to better organise themselves through an action/research/training process, which anticipates the gaining of new learning and a voice in society. Furthermore pilot projects like MBOMIPA, which are exploring how responsive governance at the local level may best be effected, are effectively engaged in clarifying and articulating

the concerns of rural communities with respect to the sustainable use of natural resources (e.g. wildlife) in people's livelihoods.

Map 2.1 Semi-arid zones in Tanzania

3. PROJECT PURPOSE

The project purpose is:

- To gain a comprehensive understanding of the assets and livelihood strategies available to and undertaken by the poor in the semi-arid areas of Tanzania, together with the factors that have shaped those strategies, including social and economic change and the transforming structures and processes.

NRSP saw this and parallel projects as the first stage - to develop analysis and understanding - in a two-stage approach. This first stage would thus provide the basis, including the establishment of local partnerships, for second stage projects which will be tasked with the development, validation and adoption of a range of interventions intended to reduce poor people's vulnerability and enhance their livelihood options.

4. OUTPUTS

The project outputs are:

1. Current state of knowledge on livelihood systems in semi-arid Tanzania comprehensively explored, factors shaping livelihood and coping strategies analysed, and key knowledge gaps identified.
2. Current state of knowledge on poverty scoped, and contextualised in terms of semi-arid livelihood systems.
3. Partnerships with key Target Institutions established and demand for new livelihood options confirmed.

4.1 Output 1: Current state of knowledge on livelihood systems in semi-arid Tanzania comprehensively explored, factors shaping livelihood and coping strategies analysed, and key knowledge gaps identified.

4.1.1 Description of research results.

Livelihood systems in the central semi-arid lands

Earlier farming systems classifications suggest that the central zone is overlapped by two main farming systems: the livestock-sorghum-millet-cotton-rice system which occurs in Sukumaland (Shinyanga and Mwanza); and the pastoral and agro-pastoral system which is associated with much of the rest of the zone and adjacent drylands. These production systems are briefly elaborated in Section 3.4 of the synthesis report (Annex 1).

Recent livelihood approaches however move the analysis beyond the classification of agricultural production systems. A livelihood system comprises the portfolio of assets available to the household, the transformational activities, or strategies, undertaken by household members to ensure survival, and the resulting livelihood outcomes. In addition to the resources and resourcefulness of the household, the process is mediated by various external factors; and together they determine whether the outcomes will lead to the consolidation or depletion of the asset base, towards sustainable livelihoods or mere survival. The quantity, quality and mix of assets accessible to the household determine the available livelihood strategies. Households with limited and limiting asset bases (i.e. those perceived locally as poor), have fewer options; their pattern of livelihood strategies is typically different from that of less poor households (Annex 1, Section 2).

Using this set of approaches, Section 4 (Annex 1) presents an analysis of livelihood patterns throughout the study area, and of the factors influencing household strategies. **Agriculture, directly or indirectly, remains important to the wellbeing and livelihoods of all in the semi-arid rural areas** (and beyond). Notional descriptions of households as smallholders,

agro-pastoralists, pastoralists or commercial farmers, however, fail to take account of the nature and extent of the widespread processes of social change, which increasingly define the rural development context. The key household indicators of these processes - prosaically referred as de-peasantisation and de-agrarianisation - have been identified as **occupational adjustment, income generation, spatial relocation, and social identity** (Bryceson, 1999).

While diversification and migration strategies are not new to rural Tanzanian households, the past fifteen years have witnessed an increase in the diversification of people's livelihoods. This increasing prevalence of non-agricultural income generation and the associated individualisation of economic activities has eroded community and household traditions, including long-standing agrarian divisions of labour.

Project findings reinforce this picture. Households throughout central semi-arid Tanzania are engaged in different and often multiple livelihood strategies. These include **agricultural intensification and extensification, livelihood diversification, and migration** (see Table 4.1).

Agricultural intensification and extensification (Section 6.1.1; Annex 1):

- With access to irrigation and with the means to market their produce, wealthier farmers in parts of Dodoma and Iringa, whose livelihoods are linked to high value crop production, are engaging in intensification. In the Masai Plains, where land availability is not an overriding constraint, resourceful farmers are described by one commentator as having embarked on extensification with "a sense of recklessness" (case study 7). Both strategies have resulted in accumulation outcomes.
- The poor continue to experience limited access to productivity enhancing inputs, land, and difficulties in transporting crops to market. They are generally unable to increase outputs through capital intensive production.
- The bringing of more land into cultivation is ubiquitous, and almost all case studies refer to reduced areas and periods of fallow.
- Wealthier farmers, whose liquid and social assets base enable them to adopt accumulation strategies, are taking over the more fertile and tractable holdings together with extending the agricultural frontier (e.g. case studies 2 and 7, Section 5, Annex 1).
- Conservation measures do not feature prominently in the farming practices of wealthier groups. Poorer households too, often effectively displaced by more resourceful farmers, are forced to cultivate increasingly marginalised and fragile soils or exploit off-farm natural resources, often with negative environmental impacts (e.g. case studies 2 and 7, Section 5, Annex 1).
- Although the semi-arid areas of Dodoma, Singida and Arusha accommodate more than half of the country's cattle population, cattle ownership increasingly and predominantly resides with smaller groups of wealthy people. Evidence from Shinyanga also suggests that repeated distress cattle sales have led to increased livestock polarisation (CARE, 1995). (These changes along the itinerant pastoral/cultivator axis have been referred to as the agriculturalisation of pastoralism.)

Diversification and migration (Section 6.1.2; Annex 1):

- Poorer agricultural households are increasingly forced into non-specialist wage labour (on- and off-farm) and the use of off-farm natural resources, to off-set deficits in food production. With less time and resources available to them to cultivate their own farms, their adoption of on-farm risk averse strategies (e.g. drought resistant, low value food crops), does little or nothing to reduce their longer-term vulnerability.

Table 4.1 Examples of diverse livelihood portfolios across semi-arid Tanzania

Location (& source)	HH case study strata	Strategies undertaken by wealth groups
Ikuwala sub-village, Mazombe Division, Iringa District (Case Study 2)	Accumulating farmers	Substantial returns from crop sales (tomatoes, maize, sunflower), and use of hired labour; significant incomes from business, crafts or rents (e.g. tractors, oxen, beer brewing).
	'Peasants' [†]	Modest incomes from agriculture (tomatoes, sunflower), using little hired labour; diversified income sources include piecework, crafts, petty commerce, rents, and off-farm NRs.
	'Peasant labourers' [†]	Subsistence cropping underpinned by cash income predominantly associated with piecework and with off-field NRs (e.g. grass cutting, firewood collection).
Kitunga village, Kwimba District, Mwanza Region (CS3) Sign. historical out-migration, presently limited.	Wealthier minority	Top quintile control 50% of land, and market larger proportion of produce (rice, maize, cotton); further accumulation held in check by labour constraints. Complementary livestock keeping: draught power, HH milk production, brideprice.
	Poorest half	Cash (cotton), and food crops (rice, maize) for consumption - insufficient for year in question - and sale; main source of income for circa 40% from wage labour or off-farm employment.
Shinyanga District, Shinyanga Region (CS4)	Non-poor tercile (by consumption)	Cash income from livestock (live & products) sales (64%)*, diverse portfolio of business enterprises (15%)*. Crop income (20%)*; majority however consumed.
	Middle tercile	Cash income split between livestock (live & products) sales (40%)* and non-farm incomes (26%)*. Crop income (33%)* based on higher proportion of higher value/risk crops (i.e. maize, paddy).
	Poorest tercile	Subsistence cropping of low return, drought resistant crops (sorghum, millet, sweet potatoes) (44%)*; underpinned by off-farm activities (cotton harvesting, migration to cotton ginneries) (37%)*, and some livestock related sales (16%)*.
Dodoma Rural District, Dodoma Region (SUA Field work)	Wealthy minority	Own large herds of cattle (tajiri ng'ombe), cultivate relatively large fields, access to better quality land (irrigated), hire labour, involved in non-farm activities (eg milling machines, petty trade).
	Poor	Own no or few cattle, less access to quality land, own fewer material assets; work as labourers, migrate to seek employment
Haubi Village, Kondo District (CS7) Out-migration by all groups to expansion areas; wealthier groups may effect satellite HHs.	Wealthiest	Intensive intercropping for cash & consumption using hired labour; plus incomes from businesses
	Average	Intensive intercropping plus gardens (vegetables, fruit, sugar cane) for sale & subsistence; sharecropping arrangements with poorest group; formal sector employment and petty business.
	Poorest	Subsistence production (maize, sorghum, beans) underpinned by day labouring - <i>kibarua</i> ; sharecropping arrangements with middle group.
Soya Village, Lower Irangi, Masai plains (CS7) Expansion area: In-migration from Kondo District	Wealthiest	Extensive/commercial crop production (bulrush millet, sorghum, oil seeds, finger millet maize) using hired even imported labour.
	Average	Extensive crop production; hired or cooperative labour at peak periods only.
	Poorest	Subsistence production (maize, bulrush millet, beans) underpinned by day labouring; leasing and sale of land to secure ploughing services, inputs or credit.

[†] terminology used by case study authors, Birch-Thompson *et al.* (1999).

* percentage of total income (i.e. including cash and subsistence contributions to consumption).

Diversification and migration (continued)

- Diversification by the poor in the form of casual wage-labour (notably including, mining), may be undertaken locally, in adjacent districts or outside the region. Typically however, the limited returns to such employment do not provide the poor with the opportunity to strategically enhance their asset base - to accumulate.
- From the case studies it appears that poorer rural households are driven into off-farm activities including the use of non-farm natural resources, in order to survive. For the wealthier rural households however, non-farm activities complement successful agrarian accumulation strategies, while use of non-farm natural resources does not generally feature.
- Youth, predominantly but not exclusively male (see Van Vuuren, 1999), see few opportunities in agriculture and are disenchanted with village life and mores. Many are migrating to urban centres in search of alternative employment, particularly trade. This 'greying of the countryside', as with other trends (e.g. in cattle ownership), while not a new phenomenon has particular prominence at present.
- The nature of the diversification of livelihood portfolios and associated income (monetary and non-monetary contributions to household consumption) composition for contrasting wealth groups (ie the poorest cf. the wealthiest) are significantly different.

Table 4.2 Coping mechanisms for lower and middle strata in semi-arid Shinyanga

Type of livelihood strategy	Livelihood system component adjustments		
	Asset adjustments	Strategies/activities	Consumption adjustments
Seasonal coping - or coping with transitory food insecurity:	<ul style="list-style-type: none"> - Borrowing food from friends & kin: middle strata able to borrow more & without interest; poor more restricted. - Sale of productive and non-productive assets: beds, buckets, chickens for poor; bicycles, tin sheets, cattle for middle strata. - Redistribution of livestock. 	<ul style="list-style-type: none"> - Wage labour '<i>kibarua</i>': weeding, cotton harvesting, land preparation for food crops, water collection, house construction - generally in surrounding area. - Out-migration of individuals in search of labour. 	<ul style="list-style-type: none"> - Reduced frequency & quantity of meals - Substitution of sweet potatoes & sorghum for preferred maize and rice. - Increased use of wild foods. - Sending children away to relatives.
Surviving in bad years also includes:	<ul style="list-style-type: none"> - Calling down formal claims (Food Aid) 	<ul style="list-style-type: none"> - Out-migration of household 	

(source CARE, 1995: 38-41)

Livelihoods and coping behaviour (Section 4.6; Annex 1)

Coping strategies are particular household responses to seasonal crises or unusual shocks to the farming system. Research indicates that these strategies are undertaken in a predictable and logical sequence. First there are easily reversible strategies which do not erode the asset base of the household (e.g reduced meal frequency), then less easily reversible and more erosive strategies (e.g. sale of livestock or land), and *in extremis* migration of the household. In semi-arid districts of Shinyanga it is suggested that most families will have experienced severe and prolonged food insecurity over a five-year period, and that transitory food insecurity is a yearly phenomenon (see Table 4.2). A similar picture obtains for sizeable tracts of semi-arid Singida, Dodoma and Arusha.

Coping strategies are born of necessity rather than choice. The extent to which households' strategic capabilities are undermined will be determined by the depth and breadth of their

original asset bases, and by the duration and severity of the crisis. Even when adopting similar patterns of coping behaviour, there is a qualitative difference between their effects on poorer and middle-income households in Shinyanga. In the absence of liquid assets poorer households are typically forced to sell their most basic belongings (e.g. beds, buckets, chickens) to survive, while less poor households are cushioned by possession of such items as bicycles, iron sheets, and cattle. While the poor here also appear more restricted in what they can borrow from friends and kin, social capital, particularly with wealthier or more influential households, lends key support to coping strategies. For large numbers of the rural poor the induced cycles of coping behaviour in response to prolonged and/or repeated exposure to crises, is increasing their vulnerability and creating a poverty trap.

In the 1999-2000 season, which in much of the central semi-arid zone followed three poor years, 58 percent of the population of Dodoma and 31 percent of Singida - 560,000 people - were estimated to be facing food deficits and expected to be forced into extreme coping strategies (SCF(UK), 1999).

Factors shaping livelihood and coping strategies

As already stated, livelihood strategies are determined internally by the platform of assets available to the household, and externally by the effects of mediating processes in the transformation of assets into outputs. The internal influences comprise productive resources (e.g. land, labour), capital, and impalpable qualities associated with human and social capital (e.g. knowledge and experience, disposition and relationship) (Annex 1, Section 2). These latter qualities determine the mechanism of household decision-making and the objectives set, and thus play a significant role in the selection of household strategies. In the stakeholder seminar, human and social capital were described by one participant as the 'skeleton (backbone) of livelihood strategies', and their potential as entry points for interventions was generally acknowledged (Annex 1B).

This determinant role of aspects of human and social capital in shaping livelihood strategies, is recognised in those typologies that identify dispositional or motivational criteria (e.g. risk management approaches, choice *vs.* necessity, accumulation *cf.* coping) as a means to classify household strategies. Table 4.3 illustrates how cross-referencing 'dispositional' and 'activity' typologies may be used to contrast the activity portfolios of different groups.

In the DFID SL framework the external factors - mediating processes - include 'policies, institutions and processes' together with the 'trends, shocks and seasonality' which is referred to as the vulnerability context. The research process, including the stakeholder workshop and fieldwork, identified the following as some of the key factors and processes shaping livelihood strategies (Annex 1, Section 4.8):

Policies, institutions and processes

- Structural adjustment programmes (SAPS) are reported to have undermined productivity, particularly amongst the poor, and contributed to the collapse of public services, both of which have promoted off-farm diversification. This view is forcibly articulated by Bryceson and colleagues, others however counsel that the social and environmental impacts of SAPS are 'complex, ill-defined and difficult to bound' (Mearns, 1991).
- Sectoral policies clash, government support for agricultural sector diminished.
- Uncertain market environment (e.g. fluctuations in producer prices, high input prices, poor input supply) undermine farming activities and investments.
- Labour markets elsewhere (*cf.* local casual labour markets) induce out-migration.
- Absence of (or severely limited) informal credit facilities prohibit the engagement of the poor in various strategies.
- Impact of corruption (perceived as growing) associated with the use of natural resources.
- Waning of traditional relations and institutions (e.g. the ascendancy of money over cattle), their replacement with new forms of social relations, increasingly determining household decision-making and strategies.

- Individualisation of economic activity and commoditisation are impacting on traditional practices and associated division of labour.

Table 4.3 Livelihood strategies in Ikuwala sub-village, Mazombe Division, Iringa District (Case Study 2), according to 'dispositional' and 'activity' typologies

Ellis (2000)		Livestock (keeping & pastoralism)	Food cultivation	Non-food cultivation	Collection (from woods & forests etc)	Non-farm activities (weaving)	Rural trade	Rural services (eg vehicle repair)	Rural manufacture	Remittances	Other transfers (eg pensions)
		NR based activities					Non-NR based activities				
Scoones (1998)		Agricultural Intensification & Extensification			Livelihood Diversification				Migration		
Devereux	Siegel et al	Typology of livelihood strategies according to activity									
Survival	Risk coping	<p>Strategies of the poorest group - 'peasant labourers'.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Food crops: Maize grown to meet HH consumption needs. Few if any cash crops (tomatoes, sunflower, maize).</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>70% secure cash from agricultural labour. 60% secure cash income from grass-cutting & firewood etc.</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>20% of HHs engage in crafts; and 20% in petty trade</p> </div> </div>									
Coping	Risk mitigation										
Adaptation	Risk reduction	<p>Strategies of accumulating farmers</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>High earnings from tomato and maize sales</p> </div> <div style="border: 1px solid black; padding: 5px; width: 50%;"> <p>62% derive income from renting out tractors or oxen etc; 54% derive income from other trade (wives make a notable contribution from beer brewing; further 46% derive income from crafts.</p> </div> </div>									
Accumulation	Risk reduction										
		Choice (& resilience).....(vulnerability &) Necessity									

Trends, shocks and seasonality

- Land degradation, declining soil fertility and crop yields.
- Increasing levels of conflict around the use of CPRs.
- Drought & floods compel households to engage in coping strategies.
- Epidemics (e.g. HIV/AIDS, malaria) impact on household resources (e.g. labour, dependency levels, leadership).
- Increasing population density & reduced land availability in many areas (e.g. parts of Dodoma and Shinyanga) induce diversification into off-farm activities (including seasonal migration), and cause out-migration. Elsewhere (e.g. in the southern zone of the Usangu plains) in-migration and market related demand due to growth in urban centres, is deemed to have driven intensification.

- Distress sales of livestock, plus disease and theft, may have contributed to the polarisation and commercialisation of livestock ownership.

Key knowledge gaps and researchable constraints

Section 6 of Annex 1, examines the main constraints to the livelihoods of the poor in semi-arid Tanzania. The bulk of households pursue multi-functional, often multi-spatial livelihoods, with the poorest also engaged in diversification, albeit off-farm activities undertaken to offset last seasons food production deficits, are frequently to the detriment of this season's cultivation. Constraints to agriculture include the lack of subsidies, minimal agricultural inputs, poor extension services, absence of clear pro-poor credit policy, and the lack or poor economic infrastructure (e.g. markets, roads, electricity). Furthermore, markets (i.e. produce, land, labour) and technical developments (e.g. irrigation projects) often appear to favour resource-rich farmers. The pervasiveness of diversification strategies amongst the rural poor determines that consideration of the constraints to the development of the non-farm economy is also essential. Specific areas for further research with a bearing on natural resource use include:

- Increasing agricultural productivity and value through pro-poor technologies (e.g. improved soil fertility management, soil and water management, small-scale irrigation) that build upon farmers' knowledge and practices.
- Impact of the draw of labour to mining (and tourism), on household production and the lives of women and children.
- Links between ethnicity, cultural practices, and rural poverty: are certain ethnic groups better able to adapt their livelihoods? What characterises those individuals and households that have successfully moved from coping to accumulation?
- How can access to information, knowledge and technologies be improved, and be better aligned to meet the needs of the rural poor (e.g. poor women, illiterate people, and remote households)?
- Implications of increased legal and illegal use of wild natural resources / common pool resources (e.g. timber for charcoal, fish, bushmeat) for the environment. Is there room to further develop niche markets for wild products (e.g. honey, hunting, ecotourism)?
- Pro-poor credit policy and mechanisms.
- Management options to address the impact of increasing traditional, small-scale irrigation on down stream water users, especially hydropower and the environment.
- How might the existence of recent progressive policies (e.g. wildlife policy, land acts) be made effective at the local level? What new institutional arrangements are emerging in response to this changing policy context?

4.2 Output 2: Current state of knowledge on poverty scoped, and contextualised in terms of semi-arid livelihood systems.

Key countrywide poverty studies specifically link poverty to regions within or overlapping semi-arid areas (i.e. Dodoma, Singida and Mtwara), or that are remotely located. Other studies confirm the associated link with unreliable rainfall, poor infrastructural development and poor access to markets. Despite the inadequacies of data and the complexity associated with aggregating different poverty indicators, poverty in different forms is rife in the central semi-arid areas (Annex 1, Section 3).

Two recent studies funded by DFID, were tasked with developing and updating a poverty baseline in Tanzania from existing data (URT, 2000a&b). They conclude that in 1992 twenty seven percent of the population lived below the food poverty line and 48 percent below the basic needs poverty line - this figure was revised upwards in the second study to 56 percent; poverty is inherently a rural phenomenon; Tanzania is essentially an unequal society with the best-off 20 percent having expenditure levels nearly 10 times that of the poorest; and, that the economy will need to grow by 7.5 percent for 23 years and by 9.7 percent for 15 years if

poverty reduction targets are to be met. Growth throughout the 1990s was 3.5 percent per annum.

Key data sets are severely dated, most notably population densities and trends, which derive from the last population census in 1988. The population growth rates for the central semi-arid zone are estimated to be close to the national average (2.8% per annum in 1988), but are very variable. Urban districts (e.g Singida, Shinyanga) consistently have the highest growth rates (i.e. in the range 3.7 - 4.6%), reflecting net rural urban migration. While average population densities in the semi-arid areas are deemed to be close to the mainland average (26 inhabitants per sq. km.), in Mwanza region for example, where the influence of Lake Victoria, bimodal rainfall patterns, and more productive soils, kick in, the figure is closer to 100 inhabitants per sq. km.

Besides their association with areas that have higher agricultural potential and better infrastructure, population density and growth are viewed by some authorities as pre-requisites or drivers for agricultural intensification. Possible implications for poverty and livelihoods have been incorporated on a case study by case study basis (Annex 1, Section 5).

4.2.1 Description of research results.

Less favoured areas classification (Section 3.3; Annex 1)

From a bio-physical perspective, the central semi-arid areas are associated with low and uncertain rainfall, and in many parts with poor soils, limited potential or degraded environments. On the socio-economic front, large tracts of these areas have minimal infrastructural development, offering only poor access for people to markets, health and educational facilities, safe water resources etc. We have used a variation of the matrix proposed by IFPRI in which favoured and less favoured areas are classified according to levels of bio-physical and socio-economic constraint, to group case studies used in this project. While this does not represent poverty *per se*, in those locations where both natural and man-made resources are minimal, already impoverished groups will become even more vulnerable. Table 4.4 maps out some of the case study areas against high, medium and low ratings for bio-physical and socio-economic factors.

This classification process is inevitably somewhat subjective, and not directly linked to population densities and land pressures. It does however provide a useful framework for making comparisons between a limited number of locations. At a glance, case study village locations in Dodoma Rural District are seen to be in a significantly less favoured area (low/low) than Malya town in Mwanza region (medium/medium), which is located in a more reliable and wetter rainfall area, with significant infrastructural connectivity. Indeed the authors of case study 6 found households in both Iringa-Mvumi and Mvumi Mission, Dodoma Rural District, to be severely disadvantaged when compared to other study areas, which included Malya town and Kitunga (low/medium), both in Mwanza Region (CS3).

Household poverty and vulnerability (Section 6.2; Annex 1)

The distinguishing characteristics of rural poverty as identified through a major participatory poverty analysis included minimal agricultural inputs undermining quality and quantity of food, lack of productive land close to village centres, insufficient access to health and education, lack of power over decisions, dependency, disability, and discrimination against women-headed households (Narayan, 1997).

PRA studies undertaken in various semi-arid regions by NGOs (i.e. SCF(UK) & CARE) have focused on access and/or possession of certain types of resources to assess wealth or poverty. The SCF(UK) studies, which identify 'food economy zones' as differentiated by agro-ecological and economic factors, delineate wealth groups according to land cultivated, means of cultivation, and livestock owned. Table 4.5 depicts the situation for the 'semi-arid lowlands' of Dodoma.

Table 4.4 Classification of case study locations in terms of moderately favoured & less favoured areas (after Pender and Hazell, 2000)

		Agricultural potential - biophysical environment (climate, water availability, soils)		
		High	Medium	Low
Access to infrastructure and markets	High		<p>Ruaha Mbuyuni, Iringa R.D. (along DSM-Ruaha road, availability of irrigation / Ruaha river) (SUA CS).</p> <p>Bahi Sokoni, Dodoma R.D. (along Dodma-Singida road, railway station, availability of irrigation) (SUA CS).</p> <p>Mtandike, Mahenge Division, Iringa R.D. (along DSM-Iringa road, availability of irrigation) (SUA CS).</p>	<p>Ilula, Pawaga Division, Iringa R.D. (along DSM-Iringa road, no irrigation) (SUA CS).</p>
	Medium		<p>Malya, Kwimba District, Mwanza Region (former district town, railway & roads junction) (CS3)</p> <p>Msingisi, Gairo Division, Kilosa District, Morogoro (agro-pastoral, GALUP project, road & village infrastructure / drought prone, sandy & clay loams, SA but between the two zones) (Misana <i>et al</i>, 1997).</p> <p>Lusilile, Kintuku Division, Singida R. & adjacent Uhelela, Dodoma Rural District (proximity to Dodoma/Singida road and railway, availability of irrigation) (SUA CS).</p> <p>Msosa, Mahenge Division, Iringa R.D. (rough 15km feeder road to DSM-Iringa road, irrigation facilities / fertile soils, Ruaha river, Udzungwa game reserve) (SUA CS).</p>	<p>Mtwango-Lunguya (located on major road between urban centres), Njombe District, Iringa (CS1).</p> <p>Ikuwala sub-village (proximity to DSM-Iringa-SHs road) Mazombe Division, Iringa District (CS2).</p> <p>Haubi (KEA), Kondo District (CS7)</p>
	Low		<p>Kitunga, Kwimba District, Mwanza (20 km from Malya but more isolated) (CS3).</p> <p>Mtera, Dodoma (proximity to dam) (CS5).</p> <p>Nyanzwa, Mahenge Division, Iringa R.D. (remote, 34 km from DSM-Iringa road, no good road) (SUA CS).</p> <p>Soya, Kondo District District (CS7).</p>	<p>Rural Shinyanga District (cotton, sorghum, millet, maize & sweet potatoes) Shinyanga Region (CS4).</p> <p>Iringa-Mvumi, Dodoma Rural District (CS6).</p> <p>Mvumi Mission, Dodoma Rural District (CS6).</p> <p>Kiduhi (infertile soils, remote, pastoralism), Masanze Division, Kilosa District, Morogoro (Misana <i>et al</i>, 1997).</p>

Both participatory poverty assessments and livelihood approaches link the assets and entitlements that households can mobilise in the face of hardship, to their wealth or security status. The more assets people have access to, the wealthier they are perceived to be and the less vulnerable they are to future downturns. In addition to quantity, the mix and relative flexibility of assets and their timely access are also important. Some assets are more readily liquidated (e.g. cattle, jewellery), or substitutable (e.g. labour), providing for greater livelihood flexibility, others require timely access to enhance returns (e.g. oxen, ploughs).

Table 4.5 Wealth groups & indicators for HHs in Dodoma - a 'normal' year (SCF, 1999)

Indicators	Poor	Middle	Rich
% of population	45-55%	25-35%	15-25%
Number of wives per man*	1	1	1-4 (mean 2)
Land cultivated per HH	1-3 acres	3-6 acres	6-8 acres
Type of tillage	Hand hoe	Hand hoe	Hand hoe (casual labour) Ox-plough
Cattle per HH	Owned 0; Borrowed 0	Owned 8-50 (mean 14) A third of HHs may borrow cattle.	Owned 25-125 (mean 45)
Sheep and/or goats owned per HH	Only a quarter of HHs own sheep or goats (typically 1-5)	6-20 (mean 9)	22-45 (mean 30)
Chicken owned per HH	3-11 (mean 5)	8-24 (mean 9)	5-50 (mean 15)

* Assets for the 'rich' category are given per wife i.e. a man with 2 wives would own twice the cattle.

All the studies link states of impoverishment with reduced holdings of certain assets (see Table 4.6). Poorer people typically have access to less, often more infertile, land; but more crucially they have fewer or none of the key resources - labour, 'manpower' for opening land, oxen, ploughs, time or finance - to cultivate their minimal holdings. In terms of human capital poorer households are more vulnerable to ill health, have less available labour and generally higher dependency ratios. Levels of formal educational attainment amongst adults are very low, with the evidence suggesting that the children of the poor receive less education, perpetuating aspects of vulnerability.

Project findings (Annex 1, Section 6) include:

- Poor households - no less than a sizeable minority - in the central semi-arid areas are unable to produce sufficient food for 12 months in 'normal' (*cf.* bad) seasons.
- (As per the *diversification* section above) Poorer agricultural households are increasingly forced into non-specialist wage labour (on- and off-farm) and the use of off-farm natural resources, to off-set deficits in food production. With less time and resources available to them to cultivate their own farms, they adopt risk averse strategies (e.g. drought resistant, low value food crops), which in turn increase their vulnerability.
- The poor typically secure poorer returns (e.g. yields, product prices, wages) against their investments in agriculture.
- Returns from predominantly casual employment do not enable the poor to strategically enhance their asset base or develop accumulation strategies.

- (As per the *coping strategies* section above) Induced cycles of coping behaviour in response to prolonged and/or repeated exposure to crises increase the vulnerability of poor households and create a poverty trap.
- The poor are frequently excluded from many diversification strategies because of threshold requirements (e.g. physical and liquid capital, social capital and skills).
- Poorer households are typically at a disadvantage when measured against the entrepreneurial skills and resources of wealthier households and/or the external factors that favour them. The poor are less able to influence external events.
- Agencies (target organisations) hold a range of positions on the causes of poverty and on the international poverty targets. Many are ideologically and actively engaged in poverty reduction measures, others may only have adopted the rhetoric.

Table 4.6 Assets, strategies and outcomes associated with the poorest groups

Group & Case study locations	Assets: Financial, Human, Social, Natural, & Physical	Activities/Strategies	Outcomes
'Peasant labourers' [†] Ikuwala sub-village, Mazombe Division, Iringa District (CS2)	Average cultivated area per HH is 2.27 ha.; low agricultural incomes; high dependency ratios and physical weakness; <4% with secondary education.	Subsistence cropping; income predominantly from piece work & off-farm NR; unable to hire wage labour.	Low crop output per acre; declining soil fertility and erosion.
Poorest half (50%) Kitunga village, Kwimba District, Mwanza Region (CS3)	37% without formal education; cultivating less than 2 ha.; no cattle, few or no smallstock; least possessions.	Subsistence cropping; agricultural wage labour; limited use of inputs.	Insufficient food produced for 12 months (less than 10 months in 1990-91). Declining soil fertility, overgrazing, deforestation
Poorest tercile (33%) Shinyanga District, Shinyanga Region (CS4)	Minority own cattle, half own smallstock; per capita land area 0.6 ha.; limited or no access to credit;	Subsistent cropping; underpinned by agric. wage labour & seasonal migration	Low return from crops per ha. (<i>cf.</i> other HHs.) Children's school attendance only 2/3rds that of non-poor households. Minimal investment in tools.
Poor HHs. Dodoma Rural District, Dodoma Region (SUA CS)	No or few cattle; less or no access to quality land, and irrigation; hand tools; reliant on fewer material assets.	Subsistent cropping; work as labourers; migrate to seek employment.	Hungry months - SCF (1999) suggest less than 2/3rds of food met by HH in 'normal' year. Decreasing soil fertility
Poor HHs (17%). Haubi Village, Kondo District (CS7)	Less HH labour (than other groups); own less than 0.8 ha, cultivate on average 0.4 ha. with hand hoes; no cattle, few if any smallstock; very low levels of formal education.	Subsistence production with little or no use of fertiliser; underpinned by day labouring; some sharecropping (gains access to ploughs).	Crop production not meeting annual consumption needs. Land degradation
Poor HHs (50%). Soya Village, Lower Irangi, Masai plains (CS7)	Less HH labour; own less than 2.4 ha, cultivate 0.4 ha. with hand hoes; no cattle, few if any smallstock; very low levels of formal education.	Subsistence production with little or no use of fertiliser; underpinned by day labouring; leasing and sale of land.	Crop production not meeting annual consumption needs. Holdings deteriorating.

[†] terminology used by case study authors, Birch-Thompson *et al.* (1999).

Gender and intra-household poverty (Section 6.2.2; Annex 1)

Whether as heads of household or members of households headed by men, many studies reveal that women are subject to institutionalised gendered inequalities. Restricted access to land and other natural resources, to credit, extension information and inputs, marketing structures, labour saving technologies, to off-farm employment, and their inability to command labour, amongst other things, expose women to far greater risk of poverty (Annex 1, Section 4.7).

Two of the case studies suggest that women head a significantly higher proportion - of the order of 2-4 times more - of poorer households in semi-arid areas than that identified for all rural households countrywide, but this view is contested in the general literature. The evidence does however indicate that poorer female-headed households harvest smaller amounts of food crops than poorer male-headed households, have lower incomes from employment and trade, and receive more kin gifts. Dependency ratios in semi-arid areas however, are variously cited as being higher and lower than for equivalent male-headed households, lending some ambiguity to implications for household food security and well being.

Changes in the roles of and options open to women because of the prevailing social changes and diversification are not easily separated. They will however, have been impacted by the draw of men to remote employment (e.g. mining), the adoption by men of various income generating activities traditionally associated with women, the 'greying of the countryside' and the vulnerability of old women (e.g. in Shinyanga), and the demand for casual agricultural labour by commercial farmers. Perhaps the most disturbing issue associated with livelihood assets was the lack of formal education amongst many women (upwards of ten years) predominantly from poorer households - 38% and 51% are cited - both absolutely and by contrast with men (21% and 37% respectively).

4.3 Output 3: Partnerships with key Target Institutions established and demand for new livelihood options confirmed.

Support for the agricultural sector has declined in recent years, and policy reforms intended to advance agricultural productivity, non-farm activities and rural transformation generally, have proven less than adequate. Small-scale subsistence farming remains a key component of the livelihoods of the rural poor in semi-arid Tanzania, a situation that will persist for some time yet to come. Off-farm diversification by the poor however and the changing social context suggest a parallel need for development of the non-farm economy.

If the poor are to be able to raise themselves above poverty, and not simply to have their heads held above water (i.e. the causes of sociological as much as physiological deprivation are to be addressed), then potential livelihood options will derive from consideration of the wider rural (rural-rural and rural-urban) picture. Reinvigorated support for the agricultural sector, or natural resources, should be linked and operationalised within a wider pro-poor framework. Target Institutions are key to bringing about the necessary changes in the operating environment, and to reinforcing the capabilities of rural households to access those resources necessary for sustainable improvements in their livelihoods.

4.3.1 Description of research results

The project identified a diversity of TIs, categorised by state and civil society types and function, including researchers, advisers and policy makers, planners, trainers and implementers (Section 2.4.3; Annex 1A). Of those contacted the majority expressed interest in engaging with the project. Participatory activities included rolling contact, seminar, workshop and focused consultations (Annex 1E); certain types of TIs (e.g. local government and donors) were however not well represented at the first seminar. It was significant that TIs and/or their agents had diverse agendas, and different perceptions of and responsibilities to the rural poor. Project enquiry and discourse stimulated or corroborated interest in the SL

approach, and revealed measures of demand for the emergence and facilitation of new livelihood options.

Attempts at the final workshop to explore demand in terms of identifying pointers for future strategies, focused on the identification and analysis of constraints, and in particular on difficulties in understanding (or accepting) the singularly different perceptions and rationales deployed by poorer people in decision-making. Contributions from target organisations have also focused on what has not worked, and from one or two individual representatives, on the merits of targeting the non-poor and productivity measures to indirectly effect the situation of the poor (Annex 1, Section 6; Annex 1G).

4.4 Were all anticipated outputs achieved and if not, what were the reasons?

The exploration of current knowledge on livelihood systems and their determinants at household level (Output 1) is inevitably illustrative, with differentiation between the impact of diverse determinants on different groups requiring further work. While the household / wealth group approach emphasises the diverse sets of assets and strategies available to different groups, interactions (favourable or not, and potential) between and within groups were only given cursory attention. SUA's fieldwork (Annex 1F) includes examples of patronage and cooperative practices - vertical and horizontal social capital respectively - but time constraints inhibited adequate incorporation and development of these themes. It is felt that the exploration both of group livelihood interactions and individual household decision-making processes, require further consideration within the livelihoods methodologies.

Use of the SL approach (and framework) which has poverty reduction as an underlying principle, meant that Outputs 1 and 2 were not as distinctive as envisaged in the original logframe. Moreover, the limited and dated nature of much secondary data, has impeded a fuller exposition of trends associated with poverty, population growth and else. Under Output 2 exploration of intra-household poverty relations, particularly with respect to gender and age, which is only superficially treated in much of the literature, was only briefly referred to in Annex 1 (Section 4.7) and not taken up in the fieldwork.

The process of developing partnerships with key TIs (Output 3) was better enacted than recorded, and the project has provided a framework for furthering understanding, which has been developed and/or shared with relevant TIs. It is anticipated that the process will continue, contributing in particular to the development and distribution of dissemination materials. The project did not formally explore differences between agent (or actor) and agency, or elaborate existing constraints on organisational collaboration.

4.5 What else needs to be done to take the research results forward?

A draft of the key in-country dissemination output for the project findings, 'Livelihoods, poverty and natural resources in semi-arid Tanzania', intended for use by TIs, requires pre-testing with participating TIs and subsequent distribution.

To develop a better understanding of the trends taking place in people's livelihoods, and in the key factors shaping livelihoods, there is a need to establish longitudinal livelihood data, using standardised methods for assessing income (such as that deployed by Dercon (1998)). Agencies such as SCF(UK) and CARE, who have already adopted livelihoods models, are both well placed and would have an interest in such work. Further knowledge is also required to better understand the dispositional or motivational aspects associated with livelihood strategies, and to better differentiate between key livelihood determinants (e.g. adverse trends cf. shocks; seasonality and climatic risk cf. market risks).

With approval from NRSP, material (e.g. FTR, Annex 1, the above promotional output) will be placed on the project website: <http://www.nri.org/research/SA-Tanzania-Livelihoods/>.

5. RESEARCH ACTIVITIES

5.1 Description of research activities

The underpinning philosophy adopted from the proposal stages of this project related to developing relationship and understanding with both collaborators and target institutions throughout the processes of the project. The rationale for this approach is premised on the need for influential state and civil society players to provide an enabling framework which will work *'with people in a way that is congruent with their existing livelihood strategies and ability to adapt'* to achieve sustainable poverty reduction (Carney, 1999).

The highlighting of livelihood approaches and poverty in the original call, and the inherent epistemological complexities associated with both concepts, reinforced the idea that sharing and exploring the perspectives of such key players would be essential to understanding the opportunities and constraints in promoting this 'congruency'. The research processes, in particular the novelty of livelihood approaches and those findings relating to the diverse notions of poverty held by target organisations, have subsequently endorsed this position.

The main research activities for each output, with the implementing and/or participating organisations are listed in Table 5.1.

Activity 1.1 Reviews of the general livelihoods literature and of material specific to livelihoods in semi-arid Tanzania are incorporated within section 2, and within sections 4 and 5 (case studies) respectively of the project's main report, *Household Livelihood Strategies in Semi-Arid Tanzania: Synthesis of Findings*. This report, otherwise referred to as the 'synthesis report', is reproduced as Annex 1. An annotated bibliography, *Livelihoods and Natural Resource Management in the Semi-arid areas of Tanzania*, produced by Dr F. Maganga, is attached as an annex to the synthesis report (Annex 1D).

Activity 1.2 Interviews with participating target organisations based in Dodoma and Dar es Salaam were undertaken by mixed SUA and NRI teams, and are reproduced as an annex to the synthesis report (Annex 1E).

Activity 1.3 The initial analysis and identification of knowledge gaps informed the seminar design and were incorporated as presentations (Activity 1.4).

Activity 1.4 The proceedings of the stakeholder seminar held with the participating target organisations at the TANESCO Training Institute, Morogoro, are annexed to the synthesis report (Annex 1B). The key findings of the subsequent think tank exercise with collaborators is reproduced as an annex to the synthesis report (Annex 1C).

Activity 1.5 The preliminary description, analysis, and identified researchable constraints have been incorporated into sections 2, 4 and 6 of the synthesis report. The findings associated with this activity were also presented at the validation workshop (Activity 1.7).

Activity 1.6 The village-based case study work undertaken by SUA took place in three villages in adjacent districts of Dodoma and Singida regions, and in three further villages in the semi-arid part of Iringa rural district. These case studies are reproduced as Annex 1F to the synthesis report. For reasons beyond the control of the project there were significant delays in the undertaking and analysis of the field work. Additional case study material is to be found in section 5 of the synthesis report.

Activity 1.7 The proceedings for the validation workshop held with the participating target organisations in Dar es Salaam, are annexed to the synthesis report (Annex 1G).

Activity 2.1 Reviews of the general literature on poverty and of material specific to Tanzania are incorporated within sections 2 and 4 respectively of the synthesis report (Annex 1).

Activity 2.2 These interviews are annexed to the synthesis report (Annex 1E). An interpretation of these findings are also presented in section 6 of the synthesis report.

Activity 2.3 Identified knowledge gaps and issues associated with poverty were developed both from the review stage and at a collaborators' think tank. Outputs from the latter are annexed to the synthesis report (Annex 1C).

Activity 2.4 The preliminary description and analysis have been incorporated into sections 2.4, 3.3, and 4 of the synthesis report (Annex 1). The findings associated with this activity were also presented at the validation workshop (Activity 2.6/1.7).

Activity 2.5 The proceedings for the validation workshop held with the participating target organisations in Dar es Salaam, are annexed to the synthesis report (Annex 1G). **Activity 3.1** Engagement with target organisations was a strategic component of the project process and included active participation by key agencies in the two workshops and semi-structured interviews (see Annex 1E).

Table 5.1 Research Activities

Activities		Organisations
Output 1.		
1.0	Inception Workshop held at SUA.	NRI & SUA
1.1	Review of general livelihoods literature. Review of semi-arid, regional and Tanzania specific literature.	NRI NRI, SUA, IRA
1.2	Target Organisation interviews: Dodoma & DSM	NRI & SUA
1.3	Initial analysis and identification of gaps.	NRI
1.4	Seminar on livelihoods and NRM in semi-arid Tanzania.	NRI, SUA, IRA and various TIs
1.4a	Think tank for the identification of key gaps.	NRI, SUA, IRA & Local Perspectives
1.5	Preliminary description and analysis developed, and gaps and researchable constraints identified.	NRI & SUA
1.6	Village based case studies.	SUA
1.7	Validation workshop.	SUA, NRI, IRA and various TIs
1.8	Synthesis of findings compiled.	NRI & SUA
Output 2.		
2.1	Review of general poverty literature. Review of in-country poverty literature/data.	NRI SUA & NRI
2.2	Target organisation interviews: Dodoma & DSM.	NRI & SUA
2.3	Initial analysis and identification of gaps Think tank for the identification of key gaps.	NRI NRI, SUA, IRA & Local Perspectives
2.4	Preliminary description and analysis developed.	NRI & SUA
2.5	Validation workshop.	SUA, NRI, IRA and various TIs
2.6	Synthesis of findings compiled.	NRI & SUA
Output 3.		
3.1	Strategic engagement with target organisations.	SUA, NRI, IRA
3.2	Synopsis of findings compiled.	NRI & SUA

Activity 3.2 The confirmation of poor groups' needs and demands for new livelihood options was primarily obtained from organisational sources (e.g. interviews, publications and grey literature) where agencies were mandated by or had a credible track record of working with the poor.

Activities 1.8, 2.5 and 3.3 The synthesis of findings for each of the three groups of activities have been incorporated into the project's main report, *Household Livelihood Strategies in*

Semi-Arid Tanzania: Synthesis of Findings (Annex 1). These key findings are also reproduced in a précis of this synthesis report, the key in-country dissemination output of the project.

5.2 Facilities, expertise and special resources used to implement project

A number of key sources of existing knowledge were central to the analysis and synthesis undertaken by the project. In addition to the knowledge tapped through interactions with and between the collaborating agencies, target organisations and other stakeholders, a number of publications originating from these sources, together with other publications, were found to be particularly useful. These notably include:

Household food economy assessments undertaken in 1999 by Save the Children Fund, the Prime Minister's Office and the World Food Programme, to establish a baseline food economy picture in Dodoma, Singida and Arusha regions.

- SCF(UK)/Alexandra King (1999a), Household Food Economy Assessment: Singida Region, Central Tanzania.
- SCF(UK)/Ellen Mathys (1999b), Household Food Economy Assessment: Dodoma Region, Central Tanzania.
- SCF(UK)/T Boudreau (1999c), Household Food Economy Assessment: Arusha Region.

A similar food and livelihood security assessment undertaken by CARE International in Shinyanga, Mara and Mwanza regions in 1995.

- CARE (1995), Rapid Food and Livelihood Security Assessment in Shinyanga, Mara & Mwanza Regions, CARE International in Tanzania, September 1995.

Papers from the De-Agrarianisation and Rural Employment (DARE) research programme, coordinated by the Afrika-Studiecentrum (ASC), and undertaken in collaboration with the Institute of Resource Assessment (IRA), including:

- Madulu, Ndalaha F (1998), Changing Lifestyles in Farming Societies of Sukumaland: Kwimba District, Tanzania. ASC Working Paper 27, Afrika-Studiecentrum, Leiden.
- Mung'ong'o, C.G. (1998), Coming Full Circle: Agriculture, Non-Farm Activities and the Resurgence of Out-Migration in Njombe District, Tanzania. ASC Working Paper 26, Afrika-Studiecentrum, Leiden.
- Van Vuuren, Anke (2000), Female-headed Households: Their Survival Strategies in Tanzania. ASC Working Paper 44, Afrika-Studiecentrum, Leiden.

Additional case studies (Annex 1, Section 5) were selected from the body of literature on people's livelihoods in the semi-arid areas of Tanzania. The locations of these case studies and the above studies are shown on Map 2.1.

Further resources were secured through the Sustainable Livelihoods Resource Group (SLRG), in which NRI is represented, and more recently from DFID's Livelihoods Connect website.

Spatial data describing land-use zones and administrative boundaries was secured from TANRIC, Institute of Resource Assessment, University of Dar es Salaam.

5.3 Modifications to the proposed research activities

Following discussion between NRI and NRSP management team in May 2000, alterations were made to the proposed Logical Framework. It was agreed that the interpretation of 'coping strategies' be in the wider livelihoods context, and that livelihood systems be explored using an informal, qualitative approach rather than through formal mathematical modelling.

The inception of the project, which was designed to fit within an eight-month period, suffered from initial slippage. This slippage, the impact of various disruptive events on a relatively short project, and the inevitable interference with the teaching responsibilities of SUA team members, imposed a heavy price on the timing, coordination and implementation of activities.

Tanzania's general election in late October caused the postponement of the first stakeholder workshop, and power cuts at the time of the election impinged on planned team activities. A student strike at Sokoine University of Agriculture in November and December imposed an increased workload and congested diary on SUA team members in the following term with accompanying disruption of team processes. Preliminary analytical reports, fieldwork, preparation for the validation workshop and subsequent activities were progressively delayed. Strategic re-structuring exercises at NRI have frustrated the speedy completion of deskwork in the latter stages. Communications with Morogoro have remained difficult.

More time than anticipated was required to develop and establish a common understanding of the sustainable livelihoods (SL) approach (including poverty considerations) amongst the collaborators and with the TIs. This extended process of deliberation, during which further questions about the evolving SL approach were inevitably raised (e.g. how do different household types make decisions?), together with the above mentioned delays, impeded the original intentions to develop findings from the review of secondary sources through focused field work. Moreover the SL approach with its inherent emphasis on poverty, predictably involves livelihood analysis based on socio-economic typologies (i.e. disaggregation by poverty/wealth ranking). This led to greater overlap between Outputs 1 and 2 than had been foreseen. Similarly, the earlier intention to identify and assess 'pointers for future strategies' to link into the second phase of the programme (albeit not a prerequisite to the purpose), was beyond the available time and resources of the project. Modifications to the logframe were agreed with the Programme Manager to accommodate these changes.

5.4 Extent to which planned inputs achieved

Stigmata Tenga, a community development specialist working with Local Perspectives, was unavoidably withdrawn at the last moment. Her anticipated contribution was offset by the subsequent involvement of colleagues from the Institute of Research Assessment, University of Dar es Salaam, Dr Faustin Maganga and Dr Hildegarda Kiwasila.

Neil Marsland, the original project leader took up alternative employment early in 2001.

Conflicting responsibilities due largely to unforeseen events, impaired the timeliness of inputs from the SUA team.

5.5 Special activity achievements

The project has benefited from exchanges with and/or the participation in activities (e.g. structured interviews, information sharing, seminar, think tank, field work, validation workshop) of a number of target organisations. These include: policy makers from the Vice President's Office, Division of Poverty Eradication and the Ministry of Agriculture and Food Security; local government officers for Dodoma and Iringa; research institutes including Sokoine University of Agriculture and the Institute of Resource Assessment, UDSM; development projects including HADO and MBOMIPA; international NGOs such as CARE and SCF(UK); and a number of local NGOs and networks including DONET, Forest, Trees and People Programme, INADES-Formation Tanzania, and Dodoma Beekeepers' Cooperative Society.

6. CONTRIBUTION OF OUTPUTS

6.1 Contribution of outputs towards NRSP's goals.

The NRSP goal is: *Benefits for poor people generated by application of new knowledge to NR systems.*

The NRSP semi-arid production system goal is: *Livelihoods of poor people improved through sustainable enhanced production and productivity of RNR systems.*

If poor people are to receive effective support in their quest for household security and survival, then it is necessary to understand the current nature of their livelihood and coping strategies, and the causes of their impoverishment. The project has developed knowledge and understanding in both of these areas.

Section 3 of the synthesis report (Annex 1) makes links between various poverty indicators and the characteristics of central semi-arid Tanzania. Section 4 (Annex 1) provides a descriptive analysis of the main types of livelihood strategies being undertaken in the semi-arid lands, specific information on the coping strategies adopted by vulnerable households, and an explanation of the factors shaping livelihood and coping strategies. Specific findings relating to the livelihoods and nature of poverty for poor households are brought together in Section 6 (Annex 1). Furthermore, with reference to trends in the mediating processes and the resulting emphasis on diversification - casual labour and the use of off-farm natural resources - in the livelihoods of poor households throughout the semi-arid areas, a number of constraints are identified and options flagged.

The project draws attention to the difficulties and anomalies in seeking to address and merge poverty and livelihood objectives within the constraints of RNR production and productivity solutions. Its findings for example, question how agricultural sector policy objectives focusing on productivity and commercialisation objectives and targeting smallholder farmers, can effect poverty reduction amongst the sizeable minority of poor rural householders, who are increasingly engaged in agricultural labour and only part-time farming. The project, which was conceived in terms of providing a platform from which to develop second phase interventions, has also established local partnerships, an intrinsic component of the original plan. In the context of *enabling actions* (i.e. DFID's poverty aim markers, or PAMs), the dynamics associated with both of the above points should contribute to prioritising understanding of the nature and causes of poverty as a prerequisite to the development of improved policies and institutions. The exchange and development of these ideas with local partners might also strengthen *focused actions* being undertaken by civil society organisations who seek to amplify the voice of the rural poor and extend their capabilities.

6.2 Assessment of the extent to which the OVI at the Purpose level were attained.

The OVI at the project purpose level is: *By mid 2001, an ascendance of pro-poor policy formulation, programme and project designs, relating livelihoods and sustainable NR management, in the deliberations of key government and other target institutions.*

The ascendance of pro-poor initiatives in the undertakings of government and other key agencies is in evidence, albeit the link between livelihoods and sustainable NR management is not without problems (e.g. see the wildlife policy). The contributory effect of this project in the realisation of this OVI is as yet likely to be minimal due in part to slippage of the project timetable. To date however, the project findings have lent support to the work of key participating organisations such as SCF(UK), who already employed a livelihood approach.

6.3 Assessment of the impact of the project on thinking.

The project's exploration of diverse poverty concepts and livelihood approaches and use of the latter in exploring the situation in semi-arid Tanzania, have provided both collaborating agencies and participating organisations with learning opportunities. The focus on process and in particular the emphasis on engaging with target organisations, have endorsed the value of linkages between researchers and all levels of government and civil society agencies, eroding some of the divisions insidiously enforced by profession and function. Evaluation of the wider potential impact of the project awaits wider circulation of the synthesis and summary reports. It might too be expected that project findings will have indirect effect

through any second phase projects. Given the wide adoption of SL approaches by donors and the plethora of initiatives that have recently emerged, assessing impact is not straightforward.

There are some early indications that the outputs of the project are feeding into other projects and programmes. Project findings for example, are being incorporated into a DFID Crop Protection Programme review of future opportunities for promotion and new research to address poverty in semi-arid East Africa.

6.4 What else needs to be done to promote new-found understanding.

On-going collaboration and networking with key participating agencies is deemed necessary to promote the project findings, but also mutually anticipated with those agencies which share an interest in livelihood approaches to poverty reduction in Tanzania.

SUA will publish a shortened synthesis report to be distributed amongst target agencies. Additional summary articles will be made available to regional networks and publications via participants (i.e. DONET, FTTP newsletter) and others (e.g. ALARM, FARMESA News). A more academic article will be submitted to a peer-reviewed journal, such as the *Journal of Rural Development, Development and Change*.

7. COMMUNICATIONS MATERIALS

7.1 Completed reports

All of the written materials produced by the project so far fall into the categories of workshop or seminar proceedings, and technical reports - internal technical reports:

Internal project technical reports	Location	Status
Morris, M., Butterworth, J., Lamboll, R., Lazaro, E., Maganga, F. and Marsland, N. 2001. <i>Household Livelihood Strategies in Semi-Arid Tanzania: Synthesis of Findings</i> . Chatham, UK: Natural Resources Institute [unpublished report].	Annex 1	✓
Sokoine University of Agriculture and the Natural Resources Institute. 2000. <i>Proceedings of the Inception Workshop: Understanding Household Coping Strategies in Semi-arid Tanzania, and Human and Social Capital's Role in Natural Resources Management, Sokoine University of Agriculture, Tanzania, 31 July - 2 August, 2000</i> . Chatham, UK: Natural Resources Institute [unpublished].	Annex 1A	✓
Sokoine University of Agriculture and the Natural Resources Institute. 2000. <i>Proceedings of the Seminar on Livelihoods and Natural Resource Management in Semi-arid Tanzania, TANESCO Training Institute, Morogoro, Tanzania, 31 October - 1 November, 2000</i> . Chatham, UK: Natural Resources Institute [unpublished].	Annex 1B	✓
Sokoine University of Agriculture, Institute of Resource Assessment, and the Natural Resources Institute. 2000. <i>Key Sheet: Livelihood Issues and Gaps</i> . Chatham, UK: Natural Resources Institute [unpublished].	Annex 1C	✓
Maganga, F., 2000. <i>Livelihoods and Natural Resource Management in the Semi-arid areas of Tanzania: an annotated Bibliography</i> . Dar es Salaam, Tanzania: Institute of Resource Assessment [unpublished].	Annex 1D	✓
Sokoine University of Agriculture and the Natural Resources Institute. 2000. <i>Stakeholder Visit Reports: Dodoma and Dar es Salaam</i> . Chatham, UK: Natural Resources Institute [unpublished report].	Annex 1E	✓
Sokoine University of Agriculture. 2001. <i>Human and Social Capitals Role in Natural Resource Management in Semi-arid Tanzania: Case Study Results</i> . Morogoro, Tanzania: Sokoine University of Agriculture [unpublished report].	Annex 1F	✓ revisions awaited
Sokoine University of Agriculture and the Natural Resources Institute. 2000. <i>Proceedings of the Validation Workshop on Livelihoods and Natural Resource Management in Semi-arid Tanzania, Catholic Secretariat, Tanzanian Episcopal Conference, Kurasini, Dar es Salaam, May, 2000</i> . Morogoro, Tanzania: Sokoine	Annex 1G	✓

University of Agriculture [unpublished].

7.2 Planned publications

The key in-country dissemination output for the project findings is a précis of the synthesis report (Annex 1), 'Livelihoods, poverty and natural resources in semi-arid Tanzania'. Presently in draft form, following in-country review, it will be published in Tanzania by SUA, on behalf of NRI and SUA.

A more academic article is being prepared for submission to a peer-reviewed journal, such as the *Journal of Rural Development, Development and Change*.

8. PROJECT LOGFRAME

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important assumptions
<p>GOAL Diverse coping strategies for poor rural households in semi-arid systems developed and promoted</p>	<p>By 2001, in two targeted areas, livelihood strategies and assets comprehensively understood, including inter alia employment opportunities, access to markets, structure of market systems. By 2003, strategies which improve the livelihoods of the poor, validated and adopted by target institutions in two countries.</p>	<p>Reviews by Programme Manager. Reports of research team and collaborating/target institutions.</p>	<p>Target beneficiaries adopt & use strategies and/or approaches. Enabling environment exists.</p>
<p>PURPOSE Livelihood strategies and assets of the poor in semi-arid Tanzania, comprehensively understood, together with the factors that have shaped those strategies, including social and economic change and the transforming structures and processes.</p>	<p>By mid 2001, an ascendance of pro-poor policy formulation, programme and project designs, relating livelihoods and sustainable NR management, in the deliberations of key government and other target institutions.</p>	<p>Policy (central government) and planning (district government) documents. Funding requests from target institutions.</p>	<p>Second stage of NRSP project is implemented. Development agencies incorporate new understanding.</p>
<p>OUTPUTS 1. Current state of knowledge on livelihood systems in semi-arid Tanzania comprehensively explored, factors shaping livelihood and coping strategies, analysed, and key knowledge gaps, identified.</p>	<p>1.1 Synopsis of current understanding on livelihood systems, resources and management practices, in semi-arid Tanzania, produced by end of month 3. 1.2 Analysed fieldwork completed by end of month 5. 1.3 Preliminary analysis of current knowledge on factors driving changes in livelihood strategies for different groups, compiled by end of month 6. 1.4 Validation of the analysis, the ranking of key factors, the identified trends, likely changes, and knowledge gaps, by collaborators, representatives of target institutions, and other key specialists at workshop held before mid-December. 1.5 Range of researchable constraints on poor groups' livelihood options presented in final report.</p>	<p>1.1 Literature and data reviews; minutes of meetings with TIs and collaborators. 1.2 Fieldwork report. 1.3 Seminar proceedings; draft analytical report; workshop presentation paper. 1.4 Workshop proceedings. 1.5 Final report.</p>	<p>Structure, resources and motivation of target institutions, and/or their agents, do not inhibit uptake of project outputs. Accessibility and availability of sufficiently robust data to generate comprehensive understanding.</p>

<p>2. Current state of knowledge on poverty scoped, and contextualised in terms of semi-arid livelihood systems.</p>	<p>2.1 Draft distribution of poverty, corresponding to cross-checked existing data/indicators for semi-arid areas, by end of month 3. 2.2 Synopsis of coping strategies and vulnerability contexts available by end of month 6. 2.3 Validation of 'coping strategies and vulnerability contexts' synopsis - scope and penetration - by collaborators, representatives of target institutions, and other key specialists at final workshop. 2.4 Nature and distribution of poverty and associated livelihood strategies, amongst people in Tanzania's semi-arid areas, developed by end of project.</p>	<p>2.1 Literature and data reviews. 2.2 Preliminary draft of synthesis report. 2.3 Workshop proceedings. 2.4 Final report.</p>	
<p>3. Partnerships with key Target Institutions established and demand for new livelihood options confirmed</p>	<p>3.1 Strategic consultations with key target institutions at both central and district level, confirming their beliefs in the need for new livelihood options, before end of project. 3.2 Engagement of diverse TIs with project processes (e.g. workshop attendance, participation in field work, contributions to dissemination process) and sensitisation to wider NRSP objectives (e.g. interest in future projects),</p>	<p>3.1 Minutes of consultations with target institutions; workshop proceedings; final report. 3.2 Workshop proceedings, field work records and correspondence, final report.</p>	

<p>ACTIVITIES</p> <p>1.1 Literature and data reviews. Collection and collation of information on livelihoods systems, and factors shaping livelihood and coping strategies, relevant to semi-arid Tanzanian.</p> <p>1.2 Programme of consultation with target institutions and other key stakeholders, including researchers in NRSP's parallel projects.</p> <p>1.3 Identification of gaps within current state of knowledge on livelihood systems.</p> <p>1.4 Seminar with collaborators, target institutions and other key stakeholders. Design and facilitation of seminar, production of proceedings.</p> <p>1.5 Iterative focused analysis of the factors shaping livelihood and coping strategies; identification of knowledge gaps and researchable constraints. Production of preliminary analytical report & workshop presentation paper.</p> <p>1.6 Focused fieldwork. Design of methodology, implementation, analysis and report writing.</p> <p>1.7 Validation workshop. Design and facilitation of workshop, production of workshop proceedings.</p> <p>1.8 Sub-outputs associated with activities 1.1 - 1.7 synthesised and produced in final report format.</p> <p>2.1 Literature and data reviews. Collection and collation of poverty studies relevant to semi-arid Tanzania.</p> <p>2.2 Programme of consultation with target institutions and other key stakeholders, including researchers in NRSP's parallel projects.</p> <p>2.3 Identification of gaps within current state of knowledge on the dimensions and dynamics of poverty.</p> <p>2.4 Vulnerability analysis and poverty scoping. Generation of composite poverty indicators to take account of the dynamics and multiple levels of vulnerability. Production of preliminary poverty 'maps' and presentation material for workshop.</p> <p>2.5 Validation workshop (see 1.7).</p> <p>2.6 Sub-outputs associated with 2.1 - 2.5 synthesised, and rendered in suitably concise format for the final report.</p> <p>3.1 Inclusive approach to key target institutions and other local stakeholders with respect to the seminar, workshop, and strategic consultations.</p> <p>3.2 Production of a synopsis of the effective demand for new livelihood options, and of pointers for future strategies.</p>	<p>BUDGET and MILESTONES</p> <ul style="list-style-type: none"> ● Inception meeting with collaborators and members of the <i>Human and Social Capital</i> teams, held by end of June. ● Literature and data reviews completed by end of August. ● Key knowledge gaps identified by early September. ● Seminar held by first week of September. ● Design of focused fieldwork methodology (for analysis and for poverty scoping) by second week of September. ● Fieldwork completed by mid October and analysed by mid November. ● Main analysis of factors determining livelihood strategies, and poverty mapping, completed for workshop presentation at the beginning of December. ● Modifications to analysis and poverty mapping, incorporated by early January 2001. ● Various components of the study - description of livelihood systems, factors shaping livelihoods, the distribution of poverty in semi-arid Tanzania, constraints on livelihood options, and demand for new livelihood strategies - synthesised in final report, by end of January 2001. <p>Project budget: £51906</p>	<p>Accessibility to relevant literature on livelihood systems in semi-arid Tanzania.</p> <p>Availability of and suitable rapport developed with key specialists external to the research teams.</p> <p>Local stakeholders - poor groups, CBOs and others - able and willing to share their experiences and knowledge with the research team.</p>
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9. KEY WORDS

Livelihoods, coping strategies, diversification, assets, vulnerability, rural, semi-arid, Tanzania

10. ANNEXES

ANNEX 1. **Morris, M., Butterworth, J., Lamboll, R., Lazaro, E., Maganga, F. and Marsland, N. 2001.** *Household Livelihood Strategies in Semi-Arid Tanzania: Synthesis of Findings*. Chatham, UK: Natural Resources Institute [unpublished report].

ANNEX 1A. **Sokoine University of Agriculture and the Natural Resources Institute. 2000.** *Proceedings of the Inception Workshop: Understanding Household Coping Strategies in Semi-arid Tanzania, and Human and Social Capital's Role in Natural Resources Management, Sokoine University of Agriculture, Tanzania, 31 July - 2 August, 2000*. Chatham, UK: Natural Resources Institute [unpublished].

ANNEX 1B. **Sokoine University of Agriculture and the Natural Resources Institute. 2000.** *Proceedings of the Seminar on Livelihoods and Natural Resource Management in in Semi-arid Tanzania, TANESCO Training Institute, Morogoro, Tanzania, 31 October - 1 November, 2000*. Chatham, UK: Natural Resources Institute [unpublished].

ANNEX 1C. **Sokoine University of Agriculture, Institute of Resource Assessment, and the Natural Resources Institute. 2000.** *Key Sheet: Livelihood Issues and Gaps*. Chatham, UK: Natural Resources Institute [unpublished].

ANNEX 1D. **Maganga, F., 2000.** *Livelihoods and Natural Resource Management in the Semi-arid areas of Tanzania: an annotated Bibliography*. Dar es Salaam, Tanzania: Institute of Resource Assessment [unpublished].

ANNEX 1E. **Sokoine University of Agriculture and the Natural Resources Institute. 2000.** *Stakeholder Visit Reports: Dodoma and Dar es Salaam*. Chatham, UK: Natural Resources Institute [unpublished report].

ANNEX 1F. **Sokoine University of Agriculture. 2001.** *Human and Social Capitals Role in Natural Resource Management in Semi-arid Tanzania: Case Study Results*. Morogoro, Tanzania: Sokoine University of Agriculture [unpublished].

ANNEX 1G. **Sokoine University of Agriculture and the Natural Resources Institute. 2000.** *Proceedings of the Validation Workshop on Livelihoods and Natural Resource Management in in Semi-arid Tanzania, Catholic Secretariat, Tanzanian Episcopal Conference, Kurasini, Dar es Salaam, May, 2000*. Morogoro, Tanzania: Sokoine University of Agriculture [unpublished].

11. REFERENCES

(In addition to the technical annexes listed above)

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