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Samuel Wälty

Cows, Buffaloes and the Rural Poor in India **Employment Generation, Gender, Dairying Strategies**

Introduction

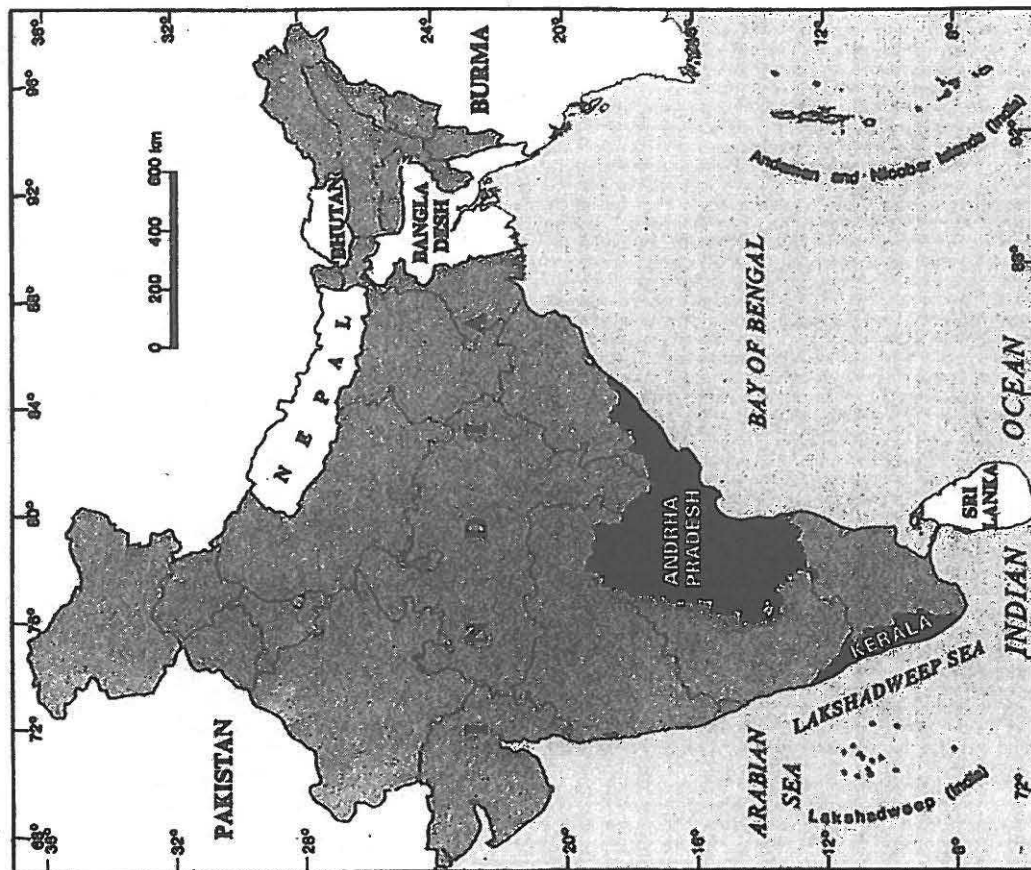
Cows figure prominently in Indian mythology, in deliberations on culture and religion in India (Hülsewiede 1986) they are mentioned in virtually all travelogues and novels set in India as well as in the foreign tourists' narratives circulated among friends and family upon their return home. It is often overlooked, however, how important the cows and buffaloes of India are – in sheer numbers and with regard to their contribution both to the national economy and to the income of individual households. India is number one in the world in terms of cattle and buffalo population. Indian cows and milk buffaloes are the often ignored milk-givers to one of the most celebrated development enterprises: Operation Flood, the world's largest dairy development programme (Candler/Kumar 1998, Doornbos/Nair 1990, George 1987, 1994, World Bank 1996). Most of the animals are kept by smallholders in herds of one to about five heads. Bigger herds are rare. Unsurprisingly, cattle and buffalo, as well as other livestock are considered an important means of generating employment and income among the poor. This is prominently reflected in the approach paper for the current formulation of a National Livestock Policy.¹ Of the three goals proposed, the first one addresses economic growth and the utilisation of India's competitive advantage in a new economic environment characterised by liberalisation in India and globalisation of markets, the third goal deals with the ecological sustainability of a growing livestock sector, and the second goal specifically addresses equity aspects:

"Enable the Small Producer to participate in the Process of Globalisation, that is to promote institutional and technological change that will enable resource poor households and women throughout the Indian countryside, but especially in the agriculturally backward and poorly endowed regions of the country, to gainfully participate in the processes of growth and modernisation in the livestock sector." (Steering Group 1996: 44)

It is in this context of concern for the participation of resource poor households in the present and predicted future growth of the livestock sector, that this paper aims to contribute to the understanding of the role of cattle and buffaloes for the rural poor in India (cf. Ashley/Bazeley/Holden 1999 on livestock and poverty alleviation in general). The term "resource poor households" mentioned in the second goal of the approach paper is considered to encompass landless, marginal and small farming households. These three categories are sometimes

also referred to as "smallholders", a term which reflects both their land and their bovine holding.

Map: India



Issues are addressed at three different levels or scales, the national, regional and local. What is the livestock sector's contribution to the national economy? And what are the national policies and programmes in this sector for employment and income generation among the rural poor? These are the two questions that are briefly touched upon in the first part. Do poor households in the real world

of rural India own cattle and buffalo? This is the leading question of the second part. For the two South Indian states Kerala and Andhra Pradesh (cf. map), the participation of poor rural households in cattle and buffalo holding is examined on the basis of quantitative survey data. The equity goal mentioned puts poor households and women into the same basket. Although certainly not all women are poor and vice versa, the role of gender in livestock production, especially in dairying, is an important aspect that is also discussed in this part. The third part examines the cattle keeping strategies of poor households (how do they manage to keep cattle?) in Kerala based on qualitative forms of inquiry. In the concluding remarks, insights gained will be examined in light of achieving the proposed second main goal for a National Livestock Policy – the participation of the rural poor in the growth and modernisation of the sector – in the context of economic liberalisation in India.²

The term bovine refers to both cattle and buffaloes. Other livestock such as goat, sheep or poultry are not discussed, but some figures quoted pertain to all livestock, as they are only available in this form.

1. Cattle and Buffalo in India

1.1 Population and Production

The 210 million cattle and 91 million buffalo make India number one in the world for both cattle and buffalo population which represent a 16% and a 56% share of the global total (FAO Statistics 1998). India is also the second largest milk producer in the world, ranking first in buffalo and third in cow milk (1995). That the US produce more than twice the amount of milk and much more beef than India, with only half the cattle population, suggests that cattle keeping in most Indian households is a low input/low output venture. It is just as important, however, that cattle and buffalo in India are often general utility animals (cf. Sastry 1995). Animal traction for agricultural work and transport, dung used as fuel and manure are important outputs. Moreover, for resource poor rural households, livestock is an asset that can easily be turned into cash in times of need.

For the financial year 1990/91 output from all livestock was Rs. 437 billion (approx. US-\$ 19 billion).³ Milk contributes 67% and dung 10% (half as fuel, half as manure) to the total output. These figures include all livestock, but milk and dung is produced mainly by cattle and buffalo, whereas meat production (14% of livestock output) consists mainly of mutton, pork and poultry. Not included in the livestock output is animal traction. It is estimated that in 1990/91 the 70 million work animals produced an output of Rs. 22 billion (US-\$ 1 million) calculated in fuel-equivalents, but the contribution of draught animals to farm power has decreased by a factor three since 1961 (Steering Group 1996: 73–74, 134–139).

The share of agriculture in the Indian GDP has dropped from 52% in 1950 to 29% in 1990 (Steering Group 1996: 85, Annex I: 3–5). The contribution of the

livestock sector (without animal draught power) to agricultural output had been declining up to 1970, but has since increased to 25% in 1990 or Rs. 437 billion, up from 16% in 1970. The steady increase is mainly based on the rapid growth of milk production in recent decades from about 23 million tons in 1970 to about 70 million tons in 1998 (FAO Statistics). According to a recent World Bank report (1996) the increase in per capita consumption and overall demand is expected to continue given the high income and price elasticity and the slow but steady progress of the Indian economy. It is further estimated that about 40% of the milk produced is home consumed which squares well with the findings of field studies conducted in Andhra Pradesh (34% milk home consumed) and Kerala (37%). About one third of the milk sold is channelled through the organised sector (Operation Flood co-operatives, government milk schemes, large private processors) and two thirds are sold by small private dealers. Revenues from exports of live animals and livestock products (about 8% of the total value of Indian exports in 1992) have exhibited an even higher rate of growth in the past decade than milk production.

1.2 Government Policies

Government expenditure on livestock is rather low when compared to the sector's contribution to the Indian economy. The Eighth Five-Year-Plan (1992–1997) outlay for the livestock sector accounts for 13% of the outlay for agriculture and less than 1% of the total outlay (Steering Group 1996: 193, Annex I: 31). Central government direct subsidies are extremely low when compared to direct subsidies for agriculture. Indirect subsidies include the services of the State Departments of Animal Husbandry, which are usually available for free or a nominal fee, and the funding of dairy development programmes.

Most of the direct subsidies in the livestock sector are cattle purchase loans under the Integrated Rural Development Programme (IRDP) for low-income families. As of March 1994, 579,000 dairy cattle loans including a subsidy component had been granted, the vast majority to agricultural labourers, small and medium farmers (Keshavan 1994). The IRDP dairy cattle programme has not performed very well, resulting in a decline of loans extended. Factors adversely affecting the programme are low quality of dairy cattle and fodder distributed, high cost of concentrate feed, poor veterinary services, poor linkages to the market, and the beneficiaries' lack of experience in profitably keeping milch animals. Of greater importance in this context is that since the early 70s, farmer co-operatives have been given a central role in the dairy sector under the Operation Flood Programme. Operation Flood views market success as an instrument for smallholder dairy development, livelihood and employment generation, and not as an end in itself. The growth of milk production described has been achieved mainly by India's small producers. To what extent do the resource poor households participate under the present co-operative regime of milk

procurement, processing and marketing? This question will be addressed on the basis of data from Andhra Pradesh and Kerala.

2. Cattle, Buffalo and the Rural Poor in Andhra Pradesh and Kerala

Before addressing the question of the participation of the rural poor in cattle and buffalo keeping, four salient characteristics of animal husbandry at the household level in India are mentioned:

- The stock holding size is very small and averages two to three bovines per farming household, except in nomadic herds in Gujarat and Rajasthan.
- The distribution of livestock is less skewed than the distribution of landholding – 66% of all milch animals were owned by the bottom 60% of the households in rural areas in 1987, and even landless agricultural labourers own livestock.
- The employment effect of the care and management of milch animals amounted to 63 million persondays in 1987.
- Income from livestock production is usually a supplementary income mainly derived from milk sale. A sample survey carried out by the National Council for Applied Economics Research (NCAER) reports that 21% of the cash income of rural households stems from the sale of milk and milk products, 1.5% from other livestock products (57% from crops and 21% from other sources). (Steering Group 1996: 61–63, 84–96, Annex I: 2)

2.1 Bovine Ownership

Based on the data of 18,000 households in Andhra Pradesh, it can be estimated that 58% of the rural households keep bovines, that is cattle and/or buffaloes. The proportion of bovine keepers increases with landholding. However, even 18% of the landless keep bovines. When only bovine keeping households are considered, it is striking to note that 70% belong to the categories of landless, marginal and small farmers. An average of four animals are kept per household, landless are at the lower end of the range (2.4 animals), and large farmers at the upper (7.3 animals).⁴ The distribution, however, is less skewed than for landholding (see figure 1).

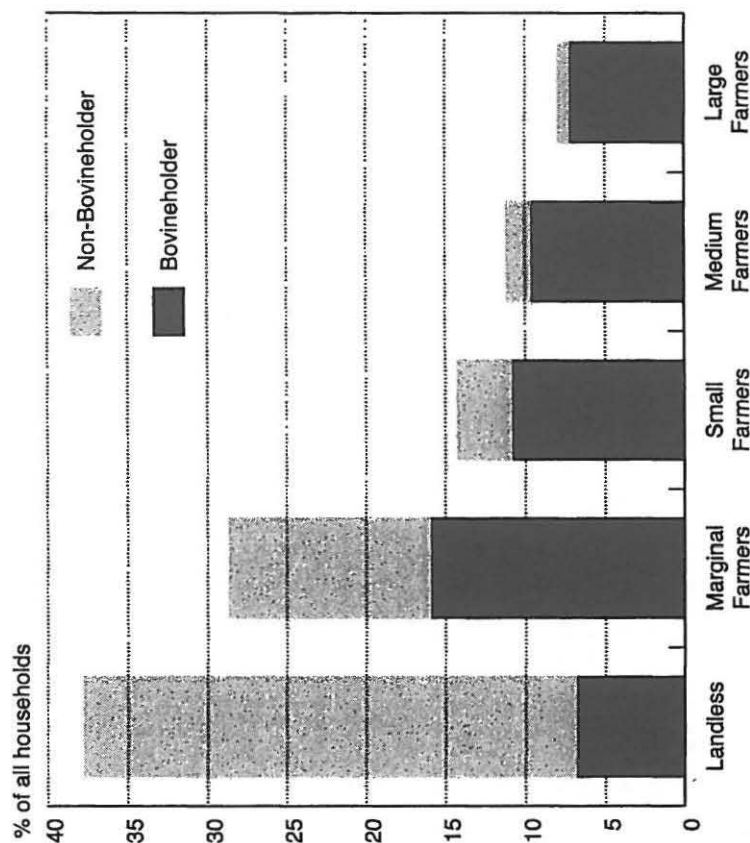


Figure 1: Land and Bovine Ownership in Andhra Pradesh (N = 18,000)

Most of the landless and marginal farmers keep exclusively female animals for milk production, while the small, medium and large farmers predominantly own mixed holdings of adult male and female animals. Pure male animal holdings are most common among marginal and small farmers (21% each). The prevalence of improved animals is highest among landless and large farmers.

It is striking that in Telangana, the least developed of the three major regions within Andhra Pradesh, fewer landless and marginal households own cattle and buffaloes than in the other regions. In the irrigated tracts of Coastal Andhra the situation is quite different. There, landless labourers working on a regular basis for crop farmers often have access to paddy straw and other crop residues in exchange for labour and dung (Ray 1994a: 6). This enables them to keep milch animals.

The reasons for bovine keeping given by 2700 farmers surveyed clearly indicate that female animals are kept for milk production and male animals for

work. "Quality milk" and "income" for females and "agricultural work" and "cart pulling" for males are the main reasons mentioned, "manure" is a clear third reason for both.

In Kerala, where buffaloes are scarce, land and cattleholding patterns are similar to those observed in Andhra Pradesh. But in the more densely populated and urbanized Kerala, average holdings – both in land and cattle – are smaller: Less than half of the rural households keep cattle.⁵

2.2 Employment Generation

In Andhra Pradesh, the average bovine keeping household spends a long personday on the daily care of bovines. Grazing is the most labour intensive activity and requires an average 6.6 hours. Statistically speaking the 20 million bovines of Andhra Pradesh (1992) keep one person busy in the households which keep cattle and buffaloes, that is in 58% of the 10 million rural households in Andhra Pradesh. A rough estimate based on the survey results is that in Andhra Pradesh the sale of milk generates an annual cash income of about Rs. 20 billion for the producer households (1993).

On average, an adult animal requires about 3 hours of work per day. But bovine keeping is subject to economies of scale. Medium and large farmers own two to three times as many animals as the landless and marginal farmers, but the amount of time devoted to bovine care per day and household varies only very little across different landholding groups. It follows, that landless and marginal farmers spend considerably more time per animal and that they are thus willing or forced to accept a smaller return on their labour input than those who are better off. For landpoor households the collection of feed and fodder can be a very time-consuming task (cf. section 3). In households with large landholding, hired labour performs 35% of all bovine-related work; in all other landholding categories the figure is much lower.

In Kerala, the employment effect is less pronounced than in Andhra Pradesh. The average herd size is smaller, fewer households keep bovines and less time is spent for grazing as cattle are mostly stall-fed. In 46% of the 5 million rural households that keep cattle, half a personday is spent on cattle keeping activities, resulting in an employment effect of 1.2 million people out of a population of 27 million (1988).

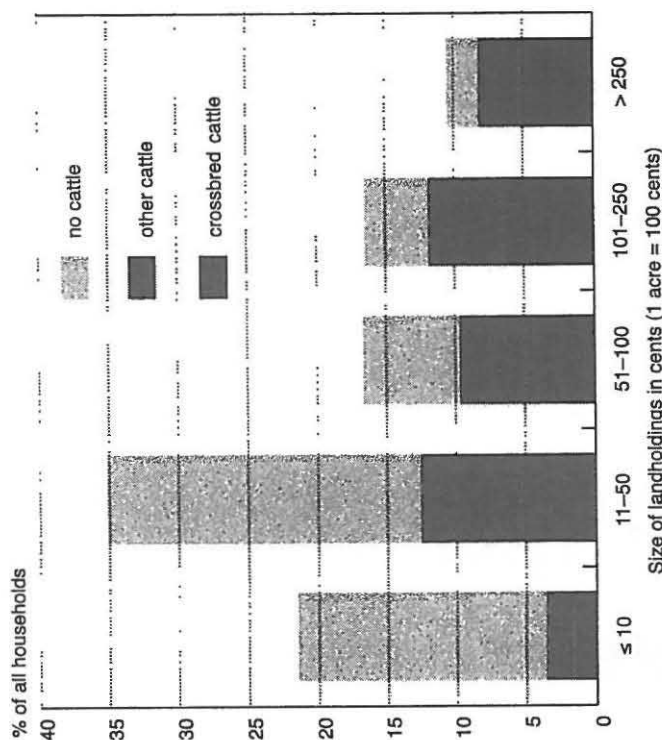


Figure 2: Land and Bovine Ownership in Kerala ($N = 10,500$)

2.3 Gender and Bovine Management

As the proposed second goal of the National Livestock Policy calls for support not only of resource poor households but also of women, it is of interest to investigate the role and involvement of women in bovine management. Social improvement is not the foremost objective of dairy and bovine development, but it is widely accepted that respective programmes and policies should contribute to social development. This is particularly true in regard to the involvement of women in bovine keeping. Also, for effectively channelling services and extension it is useful to be informed on how bovine management is organized at household level, to know who is involved in bovine keeping and how. Participation of women in bovine management can be explored in terms of labour input, type of activities undertaken and decisions taken.

In Andhra Pradesh women shoulder 35%, men 54% and children 12% of the total amount of labour time spent on bovine keeping. The variation across landholding groups and the three major regions is striking and correlates with the importance of milch animals (see figure 3). Where milch animals are more important, the workload of women is bigger. This is the case in Coastal Andhra

and generally for landless and small holders. The figures: In Telengana, men carry out roughly double the work of women, while in Coastal Andhra the respective shares are 48% and 40%. Among landless households, women and men burden almost equal shares, but in large holdings men spend three times as much time on bovine-related work than women. Among large landholders (and to some extent also among medium landholders) the contribution of women is lower than would be expected on the basis of the number of milch animals kept. In this category, women are likely to be more involved in the management of labour than in labour itself. Work contribution of children is highest in this same group of large farmers, followed by the landless. While in the former group child labour mostly belongs to the category of hired labour, among the landless the children involved are usually family members.

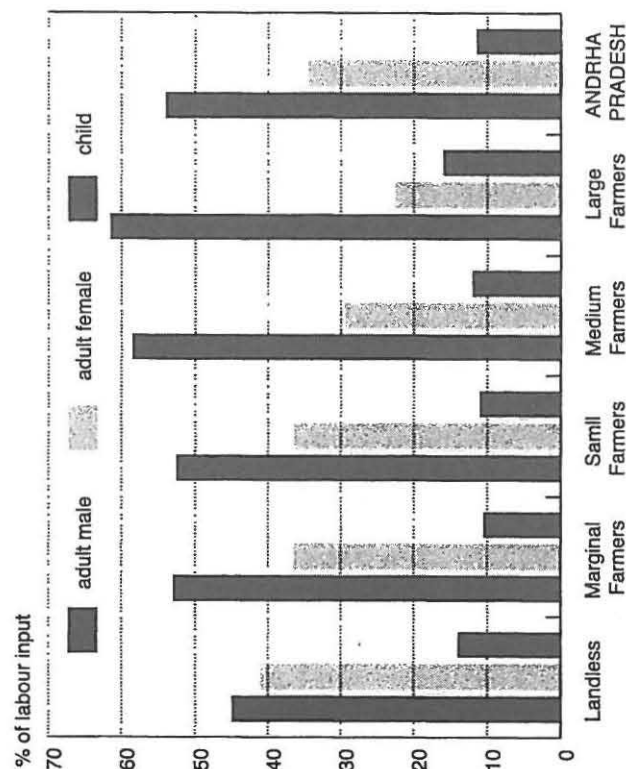


Figure 3: Bovine Management in Andhra Pradesh - Labour Input and Gender

The aggregated figures graphically depicted in figure 3 highlight the importance of the labour contribution of women in bovine keeping. The nature of this contribution can be further qualified and summarized in three points: First, farm animals are mostly looked after by men and milch animals by women. Activities centred around the home such as shed-cleaning, stall-feeding, milking and

marketing the milk are usually done by women. Activities further away from the house, such as grazing for long hours, taking animals to and from veterinary institutions, artificial insemination centre or cattle market, or purchasing feed in bulk are normally men's tasks. This division of labour along gender lines is an approximation with many exceptions that, secondly, brings to the fore that bovine keeping is an undertaking in which various members of a household participate. Thus, bovine keeping in most cases is a family undertaking (located in between farming, the men's domain, and the household, the women's domain). Thirdly, some of the regional variation in the participation of women cannot be explained in terms of the importance of milch animals. Local practices also play a role. In-depth village studies revealed that the role of women is great in a Coastal Andhra village with an All Women Milk Producer's Co-operative Society. In interior Telengana villages bovine work is a family activity, tasks are interchangeable and the involvement of women is high even in the case of farm animals, and in a village in the northern part of Coastal Andhra, men look after the bovines and most women do not know how to milk cows.

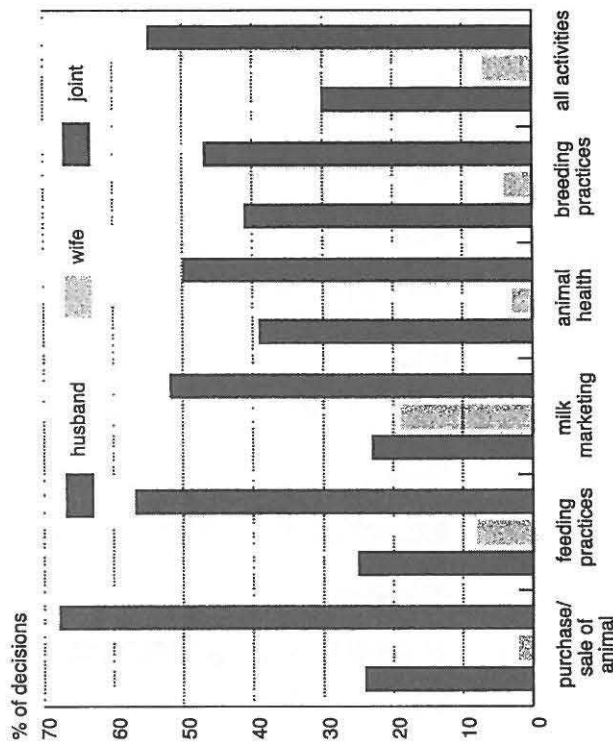


Figure 4: Bovine Management in Andhra Pradesh – Decision Making and Gender

The extent to which women have a say in bovine related matters, is not a straightforward issue, because differences of opinion on the subject are rarely

expressed. In general, wherever women play an important role in the care of milch animals, they have positive views on whether or not they prefer cows to buffaloes, crossbreeds to non-descript animals, expressed along with the reasons for their opinions, and they do have some influence on the choice of breed. That the role of different household members in decision making is not a clear-cut issue can again be taken as an indication that bovine keeping in many instances is a family undertaking. This is reflected by the fact that 55% of the decisions are declared to be jointly taken by husband and wife, followed by decisions taken by the husband alone and, rarely, the wife or other family members (see figure 4). Overall, bovine related decision making is primarily a family affair with the husband in a leading role: aggregated, husbands are involved in 85% of all decisions, the wives in 62%.

Joint decisions are most frequent in each of the five areas of decision making. However, there is some variation. Breeding practices and questions of animal health care are also quite often decided by the husband alone. Joint decisions have the highest frequency in the most crucial of questions, the purchase or sale of an animal. Milk and milk product marketing is quite often the domain of one family member only, especially so in the southern region of Rayalseema, where marketing is in the hands of the wife more often than in the hands of the husband. The influence of the wife in bovine management as reflected in decisions taken jointly by husband and wife and by the wife alone, is highest among landless and marginal farmers and lowest in large farming households. This neatly corresponds to the share of labour shouldered by women in the different landholding groups.

The findings from Andhra Pradesh suggest that when resource poor households are involved in milk production, the participation of women is an important issue indeed. This is even more the case in Kerala, where the importance of farm animals has drastically declined in the past three decades and mainly female cattle are kept. In Kerala, women supply 62% of the cattle related labour.

3. Cattle Keeping Strategies of Resource Poor Households in Kerala

In the final part the vexing question is approached, how landpoor and landless manage to become and stay dairy farmers. In an attempt to address the cattle keeping strategies of resource poor households, I will draw on the data of 64 households intensively studied by a multidisciplinary research team in six villages in Kerala (George, G. et al. 1989, Wäly 1990).

The 64 study households can be divided into three broad situational categories using the two criteria "ownership of cattle" and "continuity of ownership". At the one end of the spectrum are 8 households which have never owned cattle, at the other end 36 households that have owned adult milch animals continuously for at least five years; therefore they are labelled "stabilised dairy farmers".

Between these two groups, the non-cattle-keepers and the stabilised dairy farmers, the most complex group is located: households that have just recently acquired a milch animal or are aspiring to do so, some of them for various reasons being forced out of cattle-keeping again, only to perhaps try again later. In brief, stability of cattle-ownership has not (yet) been attained by the 20 households of this group and therefore they are called "in-and-out-dairy farmers".

Landholding	Non-Cattle-Keepers	In-and-out dairy farmers	Stabilised dairy farmers	Total
< 1 acre	8	16	14	38
> 1 acre	—	4	22	26
Total	8	20	36	64

Figure 5: *Dairying Strategies and Landownership of 64 Households in Kerala*

The three groups are presented in figure 5. A word of caution needs to be added: The sample taken was a purposive one. The fact, for example, that eight households never owned cattle has no statistical significance. They actually belong to the majority of resource poor households in Kerala (cf. figure 2) and were selected for identifying causes and reasons for not owning cattle.

To highlight the major processes observed in the 64 study households, these households are divided into two groups drawing an arbitrary line at a landholding of one acre (one acre = 100 cents = 41 are). The data clearly shows that most of the in-and-out-dairy farmers are resource poor households owning less than one acre, households often faced with the basic problem of "how to become a dairy farmer?" Most of the 26 holders of more than one acre can be classified as "stabilised dairy farmers". For these bigger landowners the basic question is "what type of dairy farming?" – dairying for home consumption, for a supplementary or for a major income. The following discussion will focus on the dairying strategies of the resource poor households only. (For the strategies of the bigger landholders cf. George, G. et al. 1988: 118–121.)

3.1 Reasons for not Keeping Cattle

Some of the eight households which have never owned cattle, lack the most basic resources.

Family A, a couple in their thirties, both illiterate, their school-age son and the husband's mother live in a one-room house in poor condition. They have no legal title to the house built under a government housing scheme. The four-cent house plot is too small for building a cattle shed, there is no shade nearby, and water has to be fetched at some distance. For three years the family has owned some 30 cents of former surplus land distributed under a

land reform scheme, but this plot is located quite far from their dwelling. The husband feels that, apart from the other limiting factors about which he was quite outspoken (lack of land, water, starting capital, considering a cattle-loan as too big a liability), to properly maintain an animal would prevent him from working. The family's main income stems from the husband's income as a casual agricultural labourer, and he spends a substantial amount of time searching for work, sometimes even venturing out of the panchayat.

Clearly, this household represents a rockbottom case that lacks the most basic resources for cattle keeping.

3.2 Entries into Dairying

For the poorer households with small land holdings the major problem is to acquire the assets to become a dairy farmer (see figure 6). A small piece of land to build a cattleshed on, water nearby, some form of starting capital, and of course an interest in dairying are the basic tangible resources required for a first attempt at dairying. If a household does not possess these basic requirements, cattle keeping is out of its reach. Furthermore, an entry into dairying will be postponed if a household has other urgent obligations or does not have labour available for full-time presence (but often only part-time occupation) for the animal. Especially for smaller landholders fodder collection on public or fallow lands or along roadsides and canals is a time consuming task.

What are the dairying strategies employed by the 30 smallholders that keep or have kept cattle at one time or another? Since small or marginal farmers usually do not have the financial resources to purchase an adult cow, in Kerala often a crossbred cow, other strategies are relied upon: "soft entry" – that is an entry into dairying, where the initial expenditure is very low – through the purchase of a calf or heifer to be reared to maturity; receiving a calf or a heifer as a gift from near relatives; availing of a soft loan-cum-grant form IRDP; or (in rare cases) pledging gold ornaments, using a chit-fund-bit or selling goats in order to purchase an adult crossbred cow.

An illustration for a "soft entry"-into-dairying strategy is provided by a ten-member household.

Family B owns a small house on a 22 cent plot. Casual labour and basket making are their main sources of income, supplemented by goat rearing, which they started 14 years ago. While the goat milk is consumed within the household, kid goats are usually sold. Two years before the study, the family purchased a crossbred calf for Rs. 200. They reared it up to maturity by grazing it on road and canal sides and by feeding collected green fodder. In spite of two attempts, the heifer has not yet conceived. Still, the family is confident to have cow milk for sale and for their own use in the very near future. In view of their ability to keep the heifer for two years, this hope does

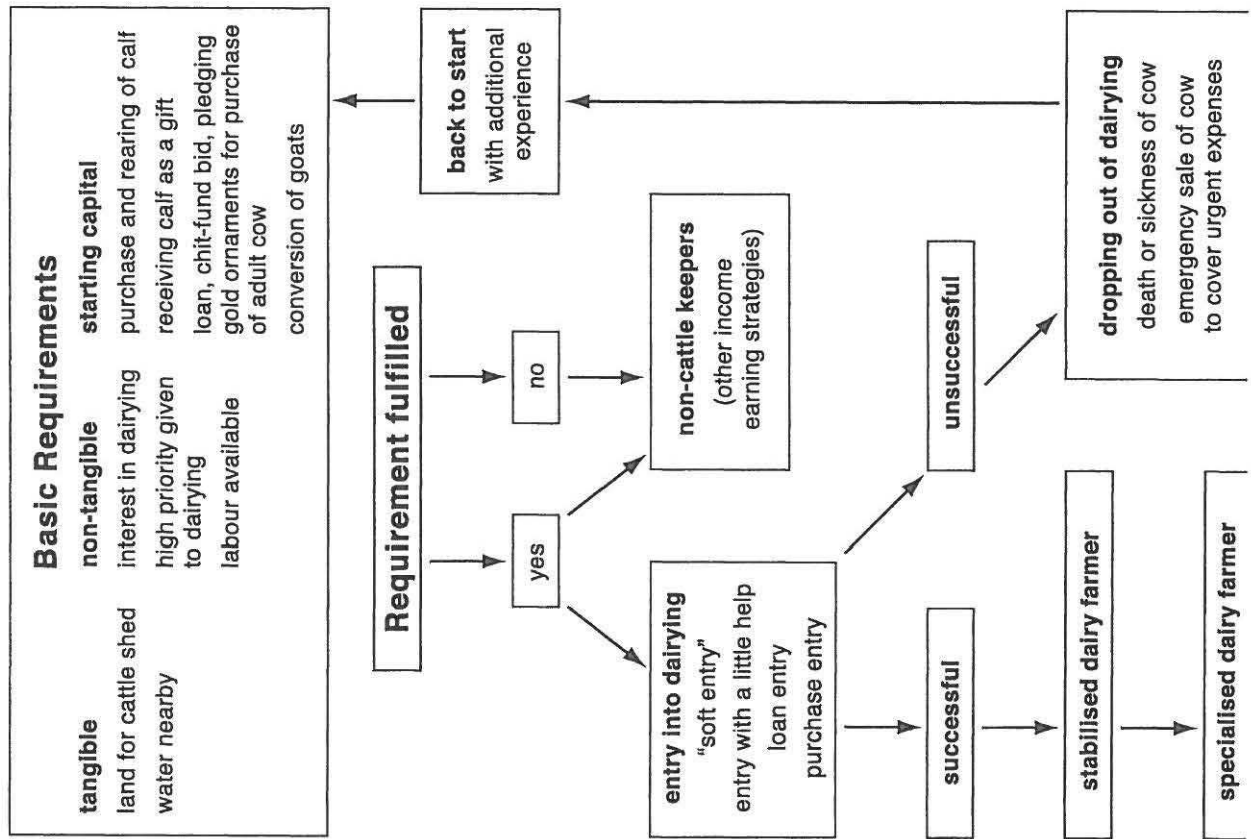


Figure 6: Stages of Becoming a Dairy Household with Few Resources

seem justified. It is quite likely that this family will make a successful entry into dairying.

The basic advantage of this "soft entry"-strategy is that the initial expenditure for purchasing a calf or a heifer is quite low, from Rs. 200 to Rs. 500 depending on age.⁶ It is a low-risk-venture; normally no loan liabilities occur. Not surprisingly, this "soft entry" is often practised by low-income families. On the other hand, rearing a calf to maturity is not an easy undertaking. Since usually no money is spent on feed or fodder until there is some milk sale income, feeding is solely done by controlled grazing and by collecting fodder. As a result maturity is often delayed and there is a high labour input before an income from the sale of milk can be obtained. But a possible future milk income is not the only reason for rearing a calf among these households. Often the animal is also seen as a disposable asset, or as a moving bank account, which is fed continuously and at any time can be sold at a higher price than the original purchase price. Thus the labour input can be capitalized (at what rate of return, however, is better not calculated).

3.3 Dropping out of Dairying

Acquiring cattle by one strategy or another is just a first step. The meagre resource base of many smallholders often renders continuous cattle maintenance and even more difficult second hurdle. Dropping out of dairying is a common feature among smallholders. Two major reasons have caused eleven households among the owners of one acre or less to drop out of dairying temporarily or permanently: sickness or death of a cow or a financial crisis resulting in the sale of a cow to meet urgent expenses (e.g. medical bills). This highlights the important function of cattle as a disposable asset, especially for the poor.

Family C, a couple in their fifties and their youngest teenage daughter, the three elder daughters are already married. They grow pepper on their 50 cents of land, but their main income stems from the husband's work as an agricultural labourer. They purchased a pregnant crossbred cow and a female calf on a bank loan of Rs. 3000. The loan was repaid within two years. When the calf had reached maturity the mother cow was sold. However, the young cow the family kept died in the later stages of her second pregnancy. Due to the cost involved – about Rs. 100 – the family delayed calling the veterinarian until it was too late.

3.4 Trying Again?

The sad reality of the farmers forced out of dairying is that they are back at the starting point, but with the additional asset of the experience gained in cattle

keeping. Thus a second attempt has more chance of becoming an entry into "stabilised dairy farming".

Family D is a five-person household owning close to a 100 cents in an area where the opportunities for non-farm income are limited. The husband works as a labourer/cultivator, his wife looks after their three school-age children. In the shed beside their very modest house they keep two female goats and four kid goats as well as two two-year-old female crossbred heifers bought as calves („soft entry"). During the first visits to this family the husband quite adamantly expressed that "I do not even think about having our own cow milk in the future, most probably we will have to sell the heifers anyway", thus referring to their first calf which they had to sell to buy staple food, as well as to the fact that they needed money to re-thatch their roof before the monsoon rains started. He also exclaimed that he would not even get a good price for his heifers, because everybody would know that he only needed a certain amount to replace his roof (it is a common feature of distress sales, that the price obtained is below the object's real value).

Two years later one of the heifers had calved, the other had to be sold – as the farmer had predicted or feared.

3.5 How to Stay a Dairying Household?

Fourteen of the 30 study households have kept adult milch animals for at least five years more or less continuously, for five of them dairying is the economic mainstay of the household, the "specialists". These are discussed in the following sub-section. For the remaining nine households dairying is a supplementary source of income. In the process of keeping milch cattle for at least five years, valuable experience is gained in management, feeding, health care, a.s.o. Thus premature deaths or sales of sick animals decrease and profitable management becomes more likely. The allocation of cattle care and related tasks also become established within the family. In other words, these households become stabilised dairy farmers. Furthermore, these families have had the good luck to stay clear of major crises, or the ability to weather a crisis without losing their cattle. Due to their meagre resource base an emergency sale in many cases cannot be entirely excluded. But the experience these families have acquired in managing milch animals would prove to be a considerable asset in an attempted re-entry.

In all but one of the nine households, daily cattle care is in the hands of one or two persons who are not engaged in wage labour and primarily stay around their house, elderly parents, the lady of the house or a daughter-in-law. Small-scale dairying demands constant presence and part-time work. It is thus an ideal income producing activity for people too old for daily wage labour or for women doing it apart from or on top of their other chores. This is not to say, though, that some assistance is not usually provided for by other members of the family.

A modest house, a few trees, and a cattle-shed housing a crossbred cow and her calf occupy family E's small plot. Taking care of the cattle is the 60-year-old

father and husband, who, in his own words, is too old for agricultural labour, but dairying does suit his present physical capacities well. The bulk of the family's income however stems from his wife, who is ten years his junior and their divorced daughter, who both work as permanent agricultural labourers. They started dairying in the typical fashion of families with limited means. They bought a low percentage Jersey crossbred calf about 10 years ago, which was then reared and finally sold after three lactations. Two of that cow's female calves were kept; both are now fully grown. One is in the married sons' adjacent household; the other one is the family's present cow, now in her third lactation.

At this point it may be worth mentioning that stabilised dairy farmers also often change their dairying strategies over time. Depending on input/output ratios, other income earning strategies and labour availability, within the household, market outlets a.s.o., some households opt for an intensification of their dairying activities, while others put more emphasis on other economic activities. Some upwardly mobile households choose what can be named a "golden exit" out of dairying by selling their cattle and relying on their considerable purchasing power for their milk consumption.

3.6 The Specialists

Three features are typical for the five families holding one acre or less, who have not only managed to become and to stay dairy farmers, but who have gone one step further by making dairying their major economic activity. First, dairying as the major economic activity of a household is managed by the men except in one household where the husband is sick and his wife, relying on her wide experience as a professional milker, takes care of their cattle. Secondly, becoming a specialized dairy farmer is not just a job to be started any Monday morning; it rather is a slow process involving the acquiring of knowledge and the gaining of experience. It is this experience which leads to the third characteristic. These farmers' ability to assess milch animals enables them to quickly buy and sell cattle when they see an advantage in doing so. In three of the households all adult cows are purchased, in two households some adult cows are home reared, some are purchased. The three features mentioned are well illustrated by Family F.

Family F owns 60 cents of moderately productive land. The family, a couple in their thirties with three children between four and fourteen years, lives in a small one-room house with a thatched roof and a mud floor on which the family members spread their beds rolls in the late evening. Their cattle shed is in poor condition, exposed to wind, rain and sun, but the shed houses two excellent crossbred cows and a calf. During the first months of lactation both cows yield twelve litres or more daily.

About 25 years ago the now head of the family left school after completing fourth grade and started to work as a cattle boy for one of his neighbours.

Washing and milking, taking the cows for grazing, later also for insemination were his jobs – activities through which he grew very fond of cattle. This was resented by his parents, “how can you spend so much time with these animals that give so little milk?” In later years he also went to work on construction sites. In 1972 he married and around that time he bought a pregnant goat with Rs. 200 from a chit-fund bid. Through good management he enlarged his herd to twelve goats. In about 1977 he then sold all but one of his goats for Rs. 1000 and bought a she-buffalo and her calf for Rs. 1450. Pledging his wife's gold ornaments he made up for the difference. After a couple of lactations the she-buffalo was exchanged for another one. Shortly thereafter, the first crossbred cows were introduced into the remote village mainly via the IRDP cattle scheme. To this farmer, cows giving up to 8 litres a day were unheard of and they caught his keen attention. Using money from a chit-fund bid as well as pledging his wife's, in the meantime reclaimed, gold ornaments again, he purchased a dry but pregnant crossbred cow from a neighbour in late 1981. Shortly thereafter he sold off his she-buffalo and bought a second crossbred cow. These two medium yielders provided sufficient income for the farmer to stop working as a construction labourer. He kept both cows for three to four lactations and then sold them in 1986 in order to buy two younger, better-yielding crossbred cows, the cattle presently in his shed. Mr. F is said to make any animal give milk, his advice on matters of cattle management and care is valued highly in the ward, and he is often asked to accompany neighbours on cattle purchase trips. During the monsoon he rents about eight acres at cheap rates for grazing, so he feels positive that he could keep up to four to five adult milch animals. Lack of capital, however, and the malfunctioning of the local milk society prevent him from further expansion of his dairy activities.

Mr. F's dedication to cattle since childhood, his talent, his “making any animal give milk”, all indicate that his advance from labourer and owner of one goat to the most respected dairy farmer in the ward cannot necessarily be taken as a model to be copied by everyone. Not everybody can play the lead fiddle.

4. Conclusion: Dairying for the poor – quo vadis?

In this paper, the role of cows and buffaloes in the Indian economy, the participation of resource poor households and the role of women in bovine keeping and management as well as their dairying strategies have been discussed. Livestock is an important sector of the Indian economy. Smallholders have benefited from national policies, for example in the co-operative dairy sector. Smallholders, even landless, are engaged in bovine keeping and dairying. Especially in the poorer households, the role of women in dairying is very substantial and often exceeds the men's contribution. The analysis of the strategies chosen for making a lasting entry into dairying discloses how small-

holders can pursue this goal successfully – and how they can fail, in case of sickness of an animal or of a distress sale. For resource poor households dairying is and will remain a precarious undertaking that offers a path to more income to a minority only. It may be added that outside India, especially in many African and Latin American countries, the participation of the poor in dairying is much lower.

At this stage, the question arises of how liberalisation in India, the commercialisation of livestock services, and the globalisation of markets will most likely affect the participation of the rural poor in the livestock sector. In July 1991, the Indian dairy processing sector was delicensed to open up the industry to private entrepreneurs and multinationals and to thereby increase competition in the procurement and marketing of milk. This was expected to result in enhancing values for both producers and consumers and to spur inflow of capital and new technologies. Also, under the GATT agreement reached in the Uruguay Round, world trade in livestock is expected to grow. In India many dairy processing licenses have been granted. A likely consequence will be that in a few years commercial milk production will be concentrated in favourable pockets in the irrigated belts in the North and West of India, and partly in the South. Moreover, the co-operative structure and its provision of inputs to dairy farmers will most probably lose influence to private enterprise operating under a different rationale. While the co-operative sector primarily considers dairy development as an activity for employment and livelihood generation, the foremost emphasis of private enterprise is on competitive advantage in the market place. Under these circumstances, it might prove to be a difficult challenge to attain the proposed second goal for a National Livestock Policy, namely to enable a wide participation of the rural poor in the growth and modernisation of the livestock sector, particularly so in the poorly endowed regions.

Even within the World Bank there are differing opinions on the role of the private and the co-operative sector (Operation Flood). The *India Livestock Sector Review* (World Bank 1996) calls for a levelling of the playing field for all market participants and with its critical review of Operation Flood prepares the ground for discontinuing World Bank support. The World Bank Operations Evaluation Department, however, in its report *India: The Dairy Revolution* (Candler/Kumar 1998) highlights the success of Operation Flood and that a major portion of its beneficiaries are poor and concludes that “by raising incomes, an apparently simple single-commodity project can have multiple beneficial effects, including nutrition, education (especially of girls), and job-creation” (p. 60).

Further inquiry is needed to assess how liberalisation and globalisation will affect the participation of the poor in bovine keeping. Much will depend on how remunerative and thus attractive, milk production will become for large farmers. Equally important will be the extent to which private processors and the market will allow small producers to participate and how government policies and programmes will enable the co-operative sector and the smallholders to progress-

sively attain higher levels of efficiency (cf. Steering Group 1996: 42–60). It may also be useful to recall that for many of the small producers, the local markets for milk and milk products are just as important as the national and international market. Moreover, livestock can contribute in other ways to the livelihood of the poor, as an asset, to diversify risk, to provide food, traction, fuel a.s.o. However, given the economic fragility of resource poor households, bovine keeping and dairying should be considered as just one of the various means to alleviate poverty.

Abstracts

Die besondere Rolle der Kuh in der indischen Mythologie ist oft bekannter als die Tatsache, dass es in keinem Land mehr Kühe und Büffel gibt als in Indien. Diese werden vorwiegend von landarmen ländlichen Haushalten gehalten und auch als Mittel zur Armutsbekämpfung betrachtet. Der Artikel diskutiert die Bedeutung der Viehhaltung für ärmere Schichten in Indien. Analysiert werden die Viehwirtschaft im nationalen Kontext, die Partizipation ärmerer Schichten an der Viehwirtschaft und die Rolle von Männern, Frauen und Kindern in der Viehhaltung. Danach wird gezeigt, mit welchen Strategien landarme Haushalte Milchtiere erwerben und unterhalten (oder wieder verlieren). Abschließend wird die Frage gestellt, wie Liberalisierung und Kommerzialisierung die Beteiligung der landarmen Haushalte an der Viehwirtschaft beeinflussen werden.

Cows figure prominently in Indian mythology, but it is often overlooked how important the cows and buffaloes of India are. India is number one in the world in terms of cattle and buffalo population. Cattle and buffalo, that is bovines, as well as other livestock are considered an important means of generating employment and income among the poor. The article addresses the role of livestock in the national context, the participation of poorer sections in bovine keeping and the role of gender in the management of bovines. Then bovine keeping strategies of poor households are discussed (how do they manage to keep cattle and buffaloes?). Briefly sketched in the concluding part is the question of how liberalisation and commercialisation will affect the participation of the rural poor in the livestock sector.

Notes

- 1 In September 1993, the Government of India in collaboration with the Swiss Development Cooperation decided to launch a number of studies to evolve a long-term strategy and policy framework for sustained development of the livestock sector. Fifteen reports commissioned by this National Livestock Policy Project and five by the World Bank form the Basis of the Report of the Steering Group National Livestock Policy Project, First Draft, March 1996, hereafter quoted as *Steering Group*. In November 1999, the National Livestock Policy was not yet officially released.
- 2 Both the second and the third part of this paper draw on studies on bovine and dairy development in Andhra Pradesh and Kerala that were initiated and sponsored by Indo-

Swiss Project Kerala, Kerala Livestock Development Board, Swiss Development Cooperation and Intercooperation for the Kerala study – cf. George, G. et al. (1988); George, P. S. et al. (1990); Wälty (1991) – by Indo-Swiss Project Andhra Pradesh, Department of Animal Husbandry/Government of Andhra Pradesh, Swiss Development Cooperation and Intercooperation for the Andhra Pradesh study – cf. Lehmann et al. (1994).

Many colleagues, farmers, officials have contributed to these studies. Without their participation and support the data presented in this paper would not have been collected, analysed and discussed. The responsibility for this paper, however, rests solely with the author, who participated in both studies.

- 3 At an exchange rate of Rs. 22.7 to 1 US-\$ in 1991. All exchange rates are calculated for the year concerned.
- 4 If not otherwise mentioned, information referring to Andhra Pradesh is taken from Lehmann et al. (1994); *Bovine and Dairy Development in Andhra Pradesh* based on a study conducted in 1992 and 1993. See also Ramesh et al. (1993); Ray (1994a, 1994b); Subrahmaniam et al. (1994); Wälty (1991). Marginal farmers own less than 1 ha, small farmers 1–2 ha, medium 2–4 ha, and large farmers over 4 ha; 1 ha of irrigated land is treated as 2 ha.
- 5 If not otherwise mentioned, information referring to Kerala in part II of this paper is taken from George, P. S. et al. (1990) *Policy Options for Cattle Development in Kerala*, a study for which fieldwork was carried out in 1988.
- 6 In 1988, US-\$ 1 = Rs. 14.

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Globalisierung intensivieren statt abblocken

1. Komparative Kostenvorteile sind entscheidend

Der von Globalisierungs„theoretikern“ unterschiedlicher Provenienz oft zu hörende Satz, in den wohlfahrtsstaatlichen Ländern Mitteleuropas seien die Lohnkosten (zu) hoch, liest sich nach *allen* wirtschaftswissenschaftlichen Lehrmeinungen ganz anders. Die Produktivität ist in diesen Wirtschaften so hoch, daß sie bei einem hohen Außenwert ihrer Währung noch so exportstark bleiben, daß ihre Handelsbilanzen Überschüsse aufweisen.

Warum sind die in Dollar gerechneten Löhne in Mitteleuropa Folge der hohen Konkurrenzfähigkeit und nicht Hindernis für Wettbewerbsfähigkeit? Handel folgt komparativen Kostenvorteilen (KKV) und nicht absoluten Preisvorteilen. Weil eine Wirtschaft einen KKV bei einem Produkt hat, lohnt es sich, dieses Produkt auf dem Weltmarkt anzubieten. Selbstverständlich kann eine Wirtschaft ein Produkt, bei dem sie KKV hat, nur verkaufen, wenn dieses Produkt auf dem Weltmarkt billiger als ein Konkurrenzprodukt ist. Wählt eine Wirtschaft für alle Produkte, bei denen sie KKV hat, einen Preis, bei dem sie nicht wettbewerbsfähig ist, dann kauft niemand Produkte dieser Wirtschaft. Ihre Währung sinkt. Die zu hoch angesetzten Preise für Waren mit KKV sinken. Der KKV wird zu preislicher Wettbewerbsfähigkeit.

Die Veränderung der Wechselkurse (in einem System flexibler Wechselkurse; die Veränderung der Preisniveaus in einem Goldwährungssystem) ist der Mechanismus, mit dem KKV in absolute Preisvorteile verwandelt werden. Neu an der derzeit ablaufenden Globalisierung ist, daß es keine strukturellen Schranken für Abwertung bei den erfolgreich aufholenden heutigen technisch rückständigen Ländern (TRL) gibt. Vor 1913 hat es ein hohes Maß von Globalisierung (Handel, Auslandsinvestitionen) gegeben.¹ Die häufig zitierte Internationalisierung der Finanzmärkte belegt, daß institutionell heute kein den Goldwährungen der Vorkriegszeit vergleichbares globalisiertes Weltwährungssystem besteht.² Vor 1913 waren jedoch bei einkommens- und preiselastischen Produkten nur solche Länder in den Welthandel integriert (Lucas 1990), deren wirtschaftliche und gesellschaftliche Strukturen außenwirtschaftlich verursachte Wachstumsimpulse zwangsläufig in Binnenmarktexpansion und steigende Verhandlungsmacht von Arbeit verwandelten, mit der Folge, daß ein Geleitzugmodell von Globalisierung entstand.

Ein solches Geleitzugmodell hat zwei Kennzeichen: Eine bei technischer Innovation zurückfallende Wirtschaft erleidet zwar Abwertung und Terms-of-Trade-Verluste, nicht jedoch Arbeitslosigkeit, weil sie wegen geringer Produkti-