The Amazon smallholders arise out from two basically different forces. The first are the *caboclos*, the population of backwoods folk formed out of the long history of detribalization, miscegenation, and extraction, from each immigrant wave that left people behind in the region. Making their living from extraction, agriculture, hunting and fishing, this group occupied lands as squatters, renters, sharecroppers, debt peons. Such rights as they have stem from informal arrangements with those who claimed vast holdings from past times through colonial grants and long-term *emphyteusis* rights, that is, usufruct rights granted by the state. These are rights to the exploitation of surface resources such as Brazil nuts, rubber, and so forth. Central to any understanding of the land issue is the importance of the land statute of 1964 which had a provision of ‘land to the cultivator’. If a person could demonstrate effective use – cultivation for a year and a day – then he could claim the holding.

Land titling issues in Amazônia would be hilarious except for the human and ecological disaster they imply. Huge numbers of Amazonian titles rest on shameless fraud. Not only has control over land and titles often shifted between federal and state levels, but legislation and *de facto* policy have had to resolve the conflicts of state appropriation, user rights, user appropriation and protection of property in a context of severe maldistribution of resources and simmering violence. Rights recognized by Brazilian law ranged from the royal *sesmarias*, titles of the seventeenth and eighteenth century whose usage was as extensive as the surveys that defined them were sketchy, to humble squatters’ rights. Land offices where archives were housed routinely went up in flames or documents vanished mysteriously. Whole counties would be sold illegally. The confusion and potential both for fraud and for competing claims were enormous.

In principle, under the land statute of 1964 and the usucapion laws of 1980, those who can show that they have occupied the land for five years and put it to productive use can in fact assert legal claim to so-called squatters’ rights –
and thus fulfils what the agrarian laws term 'the social occupation' of land, making the person who clears the forest the strongest claimant to a title, and minimizing the probability of later expropriation. 'Effective use' in Amazônia usually resulted in clearing huge areas of forest for cattle production, often displacing forest dwellers of all kinds, from Indians to peasants. And indeed, cattle pasture, which goes out of production in less than ten years, generated land values that exceeded the value of the forest by 30 per cent.

Overlapping titles and widespread fraud placed more than 12 million acres in the eastern Amazon alone into sharp contest. Time after time the ensuing conflicts pushed long-time inhabitants and migrants into new areas further onto the frontier or even into other countries. Surveys of migrants describe a relentless history of the eviction of people by livestock and colonist attrition ranging from violence to foreclosure.

THE LURES OF LAND AND LIVESTOCK

Throughout the Brazilian Amazon, the expansion of livestock production was intimately linked to the expansion of roads, and a variety of credits ranging from fiscal incentives to subsidized agricultural loans. Control of large areas of land was central to capturing these credits and speculative gains. Land-hungry grileiros – land-grabbers – began to roam throughout the Amazon. Livestock became the definitive land use of the Brazilian Amazon, occupying more than 85 per cent of the area cleared. At very low levels of productivity, one animal per 2.4 acres, or one hectare, the costs of raising cattle were rarely met by the selling price. On the other hand, the value of the subsidized credits and soaring land values generously compensated for the risible production performance of the cattle. Latifundia covered the landscape, generating the worst structure of land distribution in all Brazil. While the new latifundistas waved their fraudulent titles and spread their estates over holdings the size of kingdoms, violent disputes broke out between people who had occupied the sites for decades or, in the case of Indians, millennia. Those who made their livings out of sustainable uses of the forest were pitted against the
ranchers and land-grabbers whose fortunes lay in clearing it. Impoverished migrants from southern Brazil, attracted by the dreams of the landed, found themselves embroiled in these conflicts as they too began to try and claim part of these estates through the only means available to them: forest clearing.

In a context of frenzied land speculation, Acre naturally attracted attention. Desperate rubber barons, under-priced land, road development, all created a speculator’s dream. In the period between 1972 and 1976 land prices in the state of Acre increased by between 1,000 and 2,000 per cent, and more than a third of the state, nearly 12 million acres, changed hands during this period. Of these, only 81 titles totaling a mere 18,500 acres were formally regulated by the state land agency, INCRA. Wherever the speculative front advanced also appeared pasture. To rephrase Tacitus, where they made a desert they called it profit.

The creation of pasture required legions of men for the phase in which the forest was destroyed. Afterwards, there were very few jobs. Even ranches highly capitalized by government subsidy from SUDAM vastly overestimated, by about 60 per cent, the numbers of jobs that livestock would create on their enterprises. Livestock occupied land and created short-term jobs, but in the end left huge areas cleared of trees and the productive incomes they may have offered in ash.

The ranches financed by SUDAM were to play a particularly emblematic role in the expansion of livestock in Amazônia. Especially favored and, as we have seen, also richly subsidized, these ranches are only a handful of more than 50,000 enterprises of all sizes that run cattle in Amazônia. As symbols of the ‘propulsive’ sector of Amazonian rural development the investors received expansive holdings whose average area was just under 60,000 acres, along with several gigantic projects that were greater than 250,000 acres. These projects received nearly a billion dollars in incentives, and their performance was dismal.

The SUDAM ranches had grossly overestimated their productivity, partly because the constraints to production were not well examined and partly because the more ambitious the project, the more bountiful the incentive. On the average they
met about 8 to 15 per cent of their projections. About 30 per cent of the large projects were abandoned, while 40 per cent sold nothing. In one survey, only three of these projects were even found profitable. Several studies have shown that livestock in the Amazon is not profitable without subsidies or speculation. Moreover, of the 86 projects surveyed, 48 had no regular titles – this in a context of incendiary land conflict.

Using mostly temporary labor, these ranches represented the worst uses of land imaginable in social and economic terms. Almost anything would yield a greater return per acre in comparison, if only the actual value derived from animal production were to be calculated. The key advantages, of course, were the princely gains to be made through tax breaks, subsidies and selling large chunks of the enormous estates. Many owners managed to start up four or five projects simultaneously, made minor modifications and sold them, promoting a brisk business in the sale and purchase of these expansive holdings. About 20 per cent of these projects were canceled for improper management. The monopolization of vast lands and constant expulsion of settlers and forest dwellers resulted in the SUDAM areas becoming the sites of the most intense violence.

Large-scale ranching and livestock operations in the Amazon along with their baneful effects have dominated discussion, but the highest rates of deforestation currently occur in the state of Rondônia, where colonists and small producers are also intimately involved in deforestation for pasture, which today occupies some 84 per cent of all cleared land. The increase in Rondônia's herds was more than 3,000 per cent in the period between 1970 and 1988. The prevalence of pasture in the context of small farms has received almost no attention.

**CATTLE AND THE RATIONAL SMALL SETTLER**

Why should livestock figure so prominently in the strategy of small farmers? There are several reasons that pertain to the biological flexibility of the animals and their unusual features within the context of rural and national economies. Cattle, and more generally livestock, have been one of the means of
evening out risk in agriculture. To a small farmer debating his strategy, cattle provide an income supplement, in the form of milk or calves, and if, as is often the case in the Brazilian Amazon, there are agricultural disasters cattle can provide a large emergency 'lump' of income when sold. They thus cushion the vicissitudes of agriculture. The ability of animals to move between use and exchange values is important for smallholders, as is the ready local market for animal products where beef fetches the highest price of any source of protein, and the highest per kilogram value of any basic food commodity. Cattle provide these market benefits with less labor cost than rice, beans, corn, manioc or tree crops. Unlike crops, animals are capable of transporting themselves. Sale or slaughter of cattle is determined by a household's need or opportunities of the market and not by the biological schedules of crop production which often work against small farmers since everyone brings their main crops to market simultaneously.

Cattle production also extends the economic life of a given cleared area. Sites that have been planted with crops go out of production within three years and are then usually planted with grass. This land is grazed until it becomes choked with weeds or so degraded that no forage will grow. While the productivity of these pastures is among the lowest in the Amazon, they provide marginal return on a piece of land that would otherwise be generating very little for the settler household. This may be a minor increment, but its importance for poor households cannot be easily dismissed, especially since the labor costs are low. In highly inflationary economies, investing in animals is a way in which peasants protect their assets. For people who may not be comfortable with banks and also where interest rates do not keep pace with rates of inflation, such strategies are completely reasonable. Colonization projects have frequently produced credit lines for small-scale producers of cattle. There are obvious benefits in buying a valuable asset with borrowed money whose value is constantly evaporating, while the animal’s value exceeds or at least maintains itself at the level of inflation.

The role of cattle as a means of claiming land is well
developed for smallholders and follows roughly the same logic as that of large owners. Throughout the Amazon, pasture is the cheapest and easiest way to claim occupation rights. If, as often happens, a peasant household holds a parcel of questionable title, and this land is adjudicated, the larger the cleared area the greater the indemnification if the peasant is expropriated. As areas that have been cleared for pasture have a value that is about one-third greater than that of the forest, the peasant’s ability to speculate with these lands is also enhanced. Among colonists, land speculation and indemnification by the state or larger landowners occurs with some frequency. Finally, given the nature of windfall profits in Amazônia, a lucky strike in the garimpo may produce immense surpluses for a rural household. In this case, one of the few means of diversification in the regional economy often involves investing in land with cattle.

Much is made of the symbolism of cattle as items of prestige in Luso-Brazilian culture, and there certainly is an element of pride in emulating the distinction enjoyed by rich landowners and their gleaming white herds. But with or without the symbolic overlay, the diversity of economic ends that can be served by cattle make them very compelling for colonists. Whether these advantages center on their convenience for the household as it struggles along day to day, or in the way livestock can be used within the context of larger economic pressures, cattle have an extraordinary benefit, as against the cultivation of perennial crops, which many consider to be a more appropriate land use. It is not surprising that peasants everywhere clamor for cattle, and are intent on clearing pasture against the day to come when they can add to their humble herds. Livestock reduces risk, protects assets and, being easy to market, extends the life and value of the land parcel with a minimum of effort, since nurture of the cattle is a relatively inexpensive and accessible investment. So for both large and small operators, the advantages of cattle are inescapable. Unfortunately these private benefits have very disastrous public costs in terms of the environment and their implications for the regional economy.
As we have already described, pastures in the Amazon do not remain productive for very long. When forest is cleared for pasture there is a nutrient flush as elements held in the plant material are released to soils; but the soil nutrients decline rapidly to levels below those necessary for maintaining pasture production. The nutrient value of the grasses falls off, and shrubby weeds begin to invade the pasture. Soils become compacted. Clearing the pastures by chopping down the bush, burning and fertilizing can give pastures a new, albeit short lease of life, even though the economics of maintaining pastures versus clearing new ones works against the management of existing cleared land. Thus new areas are constantly being cleared as old ones go out of production. Pastures in the Amazon are degraded and frequently abandoned in just ten years, and these degraded lands are exceedingly difficult to recuperate. Clearing for pasture in the end often condemns land to waste, and more than 50 per cent of the cleared areas have been abandoned.

In terms of regional economies, cattle generate ephemeral employment in the clearing phase, and for brush management, but they do not absorb much labor at any scale of production. This is a private advantage for both peasants and large landowners, but for the regional economy it is a disaster. Livestock generate very little employment. The standard fazenda uses mostly temporary labor, and uses about one cowboy for every 3,600 acres cleared. Linkages to other parts of the regional economy are fairly weak. Implements, seed, wire, animal supplements and veterinary products all come from southern Brazil, so the major benefits from these transactions accrue to merchants and transporters, while most of the gains in employment occur in São Paulo. Local urban centers do consume Amazon beef, and some employment is generated in the small slaughter houses and butcher shops, but the bulk of the labor linked to pasture development is in the clearing stage for casual labor. Tax revenues generated from the sale of animals is very low. In the case of the SUDAM enterprises, the ranches produced in taxes about 2 per cent of the value of the incentive money they received.