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Peru's Rural Areas in a Period of Transition. Studying Livelihoods in the Sierra de Piura

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ABSTRACT

Local development and especially the issues of differentiation of development and living standards within each country is one of the research topics most frequently selected by geographers. In the 1990s geography joined the mainstream of research on social vulnerability and livelihood. The fact that geography is involved in such research is not random and results from its filed interests, which include threats to life and human activities caused by the natural, economic and political processes. In the 1980s the efforts to help regions affected by natural disasters and eventually the regions permanently underdeveloped and stricken by poverty intensified and created room for deeper studies on the issues of underdevelopment and poverty. The purpose of this paper is to show the factors that contribute to social vulnerability as well as identify ways that can help reduce its level and prevent crises and tensions arising from the lack of solid foundations for the development (modes of livelihood). The area under investigation is Peru. Due to a very large diversity of the natural environment of the Peruvian Andes and strong ethnic and class divisions of the population it seems to be an excellent laboratory for carrying out this study. Formulated on the basis of preliminary studies, the thesis shows a huge potential of the local communities to overcome the adverse developmental conditions. The disregard of the central and provincial authorities, lack of infrastructure and problems arising from changing environmental conditions have not pushed people out from that region to urban areas, although lack of the way out of crisis and weakness discourages many people from taking more radical action to improve their situation and support local development.

1. INTRODUCTION

"Livelihood" is a concept underpinning certain research methodologies – applied in the social sciences – that seek to analyse the elements and relationships essential for safeguarded or secured existence at the levels of the household or defined (local) social groups [13], [3].

In geographical studies, this analysis of livelihood has linked up with work on underdevelopment and poverty. Indeed, recognizing that poverty may not be treated solely by reference to size categories, the work described here has sought to emphasize the role the assets present in a given community play in the process, through which it develops, as well as the chances for and threats to that development. It is assumed that the different social assets in question like abilities and skills, traditions, natural resources influence the decisions made and behaviours engaged in to provide protection against crises and poverty.

In this article, a general consideration of geographical research on livelihood is accompanied by presentation of preliminary results obtained as part of a research project being implemented in regions of the Peruvian and Argentinean Andes, notably the Sierra de Piura (Peru).

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2. THEORY AND METHODOLOGY. THE BACKGROUND TO GEOGRAPHICAL RESEARCH ON LIVELIHOODS

Only rather recently did the livelihood concept make any more organised appearance in the geographical literature (Hann and de Zoomers, 2005). When it did so, this was in association with geographical studies concerning development. Geography, notably the regional geography devoting itself to socioeconomic organisation in geographical space plus interrelationships between the natural environment and human activity, has always applied itself to disparities in development between countries and regions, and has been able to demonstrate what the underlying causes of these might be. More recently, a major role has been assigned to geographical studies addressing underdevelopment, especially in those countries where a high proportion of the population continues to live in poverty.

For many years, the research on backwardness, poverty and underdevelopment has been the area of a post-colonial geography that concentrated particularly on the Western European centres boasting a tradition of research in former colonies and making use of its results to guide the present-day economic policy. The increased interest of the Polish geography in issues like underdevelopment, territorial disparities, poverty and growing divides in society and in the regions is very much a reflection of an ever-greater popularity, as well as the need of Poland (signalled by both academics and policymakers) to join global programmes of development aid and to work on a greater understanding of the mechanisms that intensify poverty (be them domestic or foreign).

By the early 1990s, many researchers were expressing disappointment at the ineffectiveness of the "great explanatory concepts"; all the more so since it had not proved possible to curb (at either the global or regional scales) the impoverishment processes at times seen to be affecting entire nations; nor to develop effective instruments tackling underdevelopment, or disparities between the Western World and the "Third World", as it was then known [4].

Discussion of this lack of progress with resolving issues led to radical change in the way the causes of underdevelopment were perceived, this obviously having a knock-on effect for development studies. Therefore from the early 1990s onward the old paradigms came to be superseded by new ones, at this point research tending to focus down to smaller territorial units [3].

Also, starting in the 1990s and extending later through even wider academic circles was a debate in geography and in social sciences in general regarding the "asset-based approaches" that include analyses of "livelihoods" and "sustainable livelihoods" (terms taken to denote secured circumstances for existence as such, or ones secured with an additional condition of ongoing compliance with sustainable development principles). A first definition relating to this approach to research was supplied by Chambers and Conway (1992), who stated that livelihood encompassed people, their capacities and means of living (even including, for example, their culinary habits), as well as their incomes and assets [15]. Beyond those basics, any safeguarding of people's existence in line with the sustainable development concept can be developed in case the assets a unit or social group has at their disposal are maintained or increased (or become subject to an improvement in quality), this in turn having a favourable influence on further existence [15]. Reference is also made to the concept of preservation of elements of social sustainable development, this being considered to take place in case a unit or group combats crisis effectively, or is at least in a position to rebound rapidly after a shock, crisis, or natural disaster; also, with the relevant experience acquired and conclusions drawn being passed on to the next generation, in such a way that negative consequences of further similar events are either precluded altogether or else confined to a marked degree [15].

Those geographers that followed the footsteps of Robert Chambers and Gordon Conway in their work emphasise that the proposed research approach takes in the most sensitive matters affecting development and leave the fully credible thesis that work on development has to encompass the issues of social vulnerability, alongside a whole host of research proposals concerning sustainable development [14, p. 30].

Didero (2009) drew on the UK Department for International Development's definition regarding the securing of existence, as she generated a structural model by which different elements making up the phenomenon could be analysed, along with the relationships pertaining between them. This meant that the analysis of the securing of existence in local communities had to be made on a specific basis, in order to accompany the in-depth discussion of factors that condition it, all being summarised into a scheme that was also presented in diagram form [4].

The model is founded upon an assumption that a threat to the existence of an individual, household or local community arises out of the relationships dynamic concerning the social vulnerability of these entities to various external phenomena. As these seek to overcome situations of stress, crisis or threat, they draw upon a whole series of basic livelihood assets at their disposal, most often in the form of intrinsic features of culture, politics and social structure. These assets represent a social safeguard, while their value or usefulness depends on the prevailing political, economic and institutional relationships [4].

The concept of the safeguarding or securing of existence proceeds from the assumption that the state a unit or social group finds itself in depends on the co-occurrence of a determined set of relationships and features. In the first place, all the external factors that could pose a threat to the securing of existence operate together to shape the level of social vulnerability, hence the references in the literature to the vulnerability context or environment [16]. In fact, the Department for International Development distinguishes three such types of external factors in terms of their periodicity or duration, such as:

- events of short duration that come as a shock and are associated with a sudden, unexpected phenomenon (like a natural disaster, accident or catastrophe brought about by human activity);

- long-term trends (e.g. civil war, an increase in number of people not adequately provisioned with resources necessary for life (water, soil, food));

- regular, repeating phenomena (monsoon rains, cyclones, etc.) [16].

Subsequently, analysis of the degree to which existence is safeguarded from the point of view of the sustainable livelihoods framework distinguishes five types of "livelihood assets" that are decisive in determining the level of security. The assets invoked are at the same time areas of greatest importance when it comes to support via the programmes and actions relevant bodies are putting into effect. Specifically, it is the natural capital, human capital, financial capital, social capital and technical capital that are being considered here, each of these assets dividing up into measurable components (material goods, abilities or capacities and knowledge) and nonmeasurable ones like the existence of law and the possibility of its being put to use [15, p. 6-7].

In fact, Bebbington A. (1999) put particular stress on the possibility that the legal protection due to every citizen under the law is actually used, this being regarded as a more important factor even than assets possessed (capital) in the circumstances encountered by poor groups in society [17, p. 2022]. For example, seeking to show how right Bebbington's view is, Meikle S. (2002) claims that the chances of a pupil from a poor family obtaining a suitable education depend less on whether his/her school is close by or far away, and more on whether some legal regulation or other provides for school attendance.

It is important that the state should guarantee access to inexpensive or free public education for each pupil, be this male or female [9, p. 44]. The literature on this topic shows efforts to define the whole suite of factors capable of helping a defined group in society improve their existential conditions that invariably resort to the term "assets". However, before this term reached the present level of popularity, scientific publications would rather invoke the concept of "capital", which subsequently came to be criticised as too "economic" for this research context [10, p. 316]. Later on, a convention was adopted establishing that accessible assets constitute resources of capital capable of being preserved, increased, exchanged, depleted, or mobilised with a view to further income or benefits of other kinds being generated [10, p. 316]. Studies approaching existence secured thanks to human capital refer to the potential for labour that exists in a household or in a defined local community. This depends on the level of capital present in absolute terms, as well as its state. In this case, the quantitative dimension is given by the number of active people (or else the individuals capable of working) and the amount of time assigned to productive or non-productive activities. Therefore the quality of human capital depends on the level of education and the state of health of different individuals belonging to the given household or social group [10, p. 317].

Subsequently, the physical capital would include:

- generally-accessible elements of public technical infrastructure (relating to water, power, transport, communications, schooling and medical treatment);

- private infrastructure and facilities related to technical infrastructure (e.g. residential buildings, private roads and wells);

- means of production (tools, machines, workshops) [16], [10, p. 316];

- and according to Köberlein (2003, p. 43) fixed household assets (furniture, electrical and electronic equipment) [4].

Nevertheless, the definition applied to financial capital in studies on the safeguarding of society is a complex one, not in full accordance with the definition applying in the economics context. Under the concept pursued by the Department for International Development (1999), financial capital encompasses the constant remuneration of units or of all members making up a household, regular expenditure (on food and accommodation), savings or credit [16]. Thus DFID assigns to this category, not just monetary means, but also – for example – the animals on a farm or other valuable objects possessed by a family that can be termed as "liquid assets", because of them being saleable at times when cash is needed.

On the other hand, natural or nature capital consists of natural resources capable of ensuring that the existential needs of individuals or groups in society are secured. It includes features of the natural environment everyone draws benefits from, i.e. air, water and biodiversity; but then there is the land, forest and water in the possession of individuals or groups and capable of receiving financial value when needed [4].

3. CHARACTERISTICS OF THE REGION. AGRICULTURE AND THE PERUVIAN ANDES

According to Peru's National Institute of Statistics and Informatics (INEI) as of 2006, 16% of Peru's active population has been employed in agriculture, this translating into an absolute figure of about 3 million farmers. At the same time, agriculture plus livestock-rearing contribute with just over 8% to Peru's GDP - a quite limited input for a country with rather traditional agriculture [7]. However, it needs to be recalled that the most important role in the Peruvian economy has consistently been played by mining, fisheries and fish processing, ranked on the second place. Likewise, state policy is first and foremost steered towards the development of mining, with economic strategies for the Peruvian economy over the next few years already devised and developed in this regard. Agriculture has been and remains a neglected sector of the Peruvian economy, of low productivity and also characterised by limited outlays of capital. The incomes it delivers are much lower than those obtained in other sectors of the economy, this causing further impoverishment of communities as well as ensuring a lack of means for investment. According to data from Peru's Ministry of Agriculture, only 6% of the country agricultural land is cultivated, whereas 14% is pastureland. The lack of means for investment in agriculture and cultivation has led to quite severe land degradation, primarily due to erosion [11]. The spatial structure of agricultural activity in Peru reveals major disparities in the distribution of cultivated land between the three main physical-geographical regions. Hence, 62% of the arable land is located in the Sierra, i.e. in the Peruvian Andes (50% of this being located at altitudes ranging from 2000 to 4000 m a.s.l.), whilst 32% of agricultural land is in the Montaña region (on the eastern Indian slopes of the Amazon Basin) and just 6% of it is located in Costa, i.e. along the Pacific Coast, where the majority of the country's population lives. From the point of view of topographic conditions and access to markets, the coastal lowlands experience the most favouring conditions for the development of farming.

4. RESULTS AND DISCUSSION. ASSETS IN PERU'S MOUNTAIN REGIONS

Land resources are among the most important factors underpinning development and exerting a major influence via their absorption of the agricultural workforce. Nevertheless, the area of agricultural land and its distribution do not yet constitute an index for the size and diversification of places of work in rural areas. Human capital, measured inter alia by reference to levels of education, has the same influence on those creating their own places of work and those finding employment on a local or far-off labour market. It is for this reason amongst others that a good knowledge of the features of production units (households) is essential if the conditioning behind employment in the rural environment is to be analysed correctly.

The most important resources in the hands and at the disposal of farmers presuppose the form of physical and financial capital (to be considered here as assets), i.e. land, water, livestock, tools and credit.

Land resources. The average amount of arable land possessed in the region under study is of 4 ha (as compared to the national average of 8 ha). It is possible to distinguish four types of arable land and pasture, i.e. cultivated land, land left fallow, natural pasture and waste ground. From the point of view of assets held, cultivated land is obviously the most valuable. Land left fallow is most often put to transitory use as pasture. However, pastureland as such is of lower value than cultivated land from the point of view of productive figures. The waste ground category includes land whose high-level financial outlays could turn into cultivated land (for example, by means of terracing, irrigation or the effective combating of erosion). In the department of Piura, very small part of agricultural land is arable, whilst in the province of Ayabaca the equivalent figure is 52%, and in the district of Frias more than 70% [8].

Fallow land also represents an important asset for the farmer. An increase in outlays of capital assigned to the development of agriculture that would allow for land to be improved using fertiliser, for weeds to be removed by using chemicals, and in general for more arable land to be available than at present, would together ensure a reduction in the area of fallow land.

An important factor raising the agricultural output is access to water. There where cultivation depends on rainfall, it is most typical for just one harvest a year to be obtained. However, if there is a permanent supply of water making possible the irrigation of fields, then more-intensive agriculture may take shape. It is therefore possible to increase the area of arable land by building a network of irrigation ditches. However, in the area under study, virtually all farmers have permanent access to water. And at these latitudes water should not be in short supply at altitudes above 1500 m a.s.l.. Besides serving for irrigation, water is also needed to make the adobe from which houses and farm buildings are made.

The documented ownership of land may play an important role in the development of farm production. It is on the possession of deeds and on their being recognised by authorities and investors alike, that so much may depend as farmers make decisions concerning investment – e.g. in cultivation techniques, fixed assets, labour, and so on. The lack of formallyestablished property rights may reduce willingness to invest and intensify agricultural production or to provide inputs of labour, under the circumstances of

other sources of income appearing. In case property rights are not well-documented or upheld by appropriate institutions (as may often be the case in South America), there is a risk of farmers losing their land, even when they maintain cultivation that has been taking place in an area for generations. Data from Peru's Ministry of Agriculture show that just 17% of farmland is the subject of recognised title of ownership, with farms registered by means of cadastres. This represents 27% of the area of Sierra [12]. Otherwise, the conferment of title of ownership depends on the will of local authorities and on regional policy. In the region under study, only around 15% of farmers are in possession of deeds confirming land ownership. Furthermore, the market for land and the system through which land can be leased are also poorly developed. Almost all farmers (between 70 and 93% depending on the province) are owners of the land they cultivate [12]. At the same time, the market for the purchasing and sale of land hardly exists at all, this being only natural where there are major migratory movements in progress and a marked departure of young people from rural areas to cities. Those who have moved out, but continue to visit their families back in the countryside, do claim that the land involved offers some kind of security for the future and it is treated as the equivalent of savings (or invested capital). Hence there is an assumption on behalf of many that they will return to rural areas at some point.

The fact that the proportion of those working on the land who actually lease that land is low (as a feature we now see as typical for the Peruvian Andes, if not the Argentinean Andes, which were also studied) is partly a reflection of the generally small area of land that is anyway cultivated in Peru's mountainous regions, and to some extent a reflection of the existence of surpluses (of capital and goods) that farmers would like to monetarise or invest. However, it is possible to observe major shortfalls where the workforce (or the demand for workforce) is concerned, that would seem to imply large farms lacking the labour needed for full and proper cultivation.

Thus, those who possess land strive to hold on to it, such behaviour depending on the degree to which cultivated land is concentrated, as well as the possibilities for employment besides agriculture. There, where the possibilities for finding nonagricultural employment are low and these combine with limited remuneration for farm workers, the possession of land (and its cultivation) becomes economically favourable.

Phélinas, P. (2009) states that the index describing the numbers of people per ha of agricultural land is a good determiner of the differences between land resources and the workforce managing them, this showing just how large is the labour resource that could look for employment away from agriculture [12, p. 58].

Physical capital. Physical capital is one of the most important factors maintaining (or raising) productivity in agriculture. Access to water, appropriate tools and infrastructure altogether make it possible for a farmer to sink more capital into production.

Accessible water is indeed one of the most important assets acting in support of a development of agricultural output. Hence, the installation or even maintenance of an irrigation system represents a key element in livelihood-related strategy. The use of seed of appropriate quality also raises productivity.



Fig. 1, 2. Frias - intensive vegetable-growing.

Irrigation systems are further developed by means of state aid or with the involvement of rural cooperatives. The dispersal of water to the fields via irrigation channels is a matter for committees appointed from among the inhabitants of a village or municipality. Fields may also be watered using wellwater, though this is a rather limited occurrence within the study area, applied in over less than 10% of the overall watered area. However, intensified production may reflect not only a greater use of water but also a division of arable land into smaller fields designated for intensive vegetable-growing (see fig. 1 and 2). This kind of activity combines an increase of profitability thanks to targeting of output at the market with an amelioration of the seasonal unemployment problem characterising agriculture. Farmers working irrigated land can anticipate two harvests a year, as is the case of the municipality under study here.

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A characteristic of the small-scale agriculture being engaged in Peru is the low level of mechanisation. In the region under study, the topography itself stands in the way of the use of machinery. Work in the fields is done by hand, often with nothing more than primitive tools in use. Agricultural machinery is sometimes to be found in the river valleys, but it is absent in the mountains. Horses (sometimes donkeys) are used for carrying and pulling, but these animals are treated as assets whose disposal denotes impoverishment for a family. More than one horse per household is therefore the rule. Equally, it is more and more common for farms covering more than 15 ha that target output at the market in Piura to have a purchased van or truck for the purposes of transporting harvested crops. Such a vehicle if present will be leased to other farmers in the area. Some farmers also own crop-spraying equipment, whereas several have tractors.

Finally, there is a specific type of physical capital in the form of livestock, whose functions nevertheless range from the supply of traction, through the supply of manure for the fields and the supply of animals for slaughter, up to and including the role of reserve that can be taken advantage of when other means are lacking. Farmers raise more pigs than dairy cattle, whereas poultry is present in every farm visited. Roosters are also bred for fighting, notwithstanding the fact that this activity is prohibited.

Financial capital. There is even better access to credit, or more precisely to financial means from international projects. However, where opportunities to seek credit do not exist, these represent some of the most major obstacles to the development of agriculture in Andean countries. Credit is crucial where development work needs to be done or other forms of investment put into effect; and without these there is no way of modernising output. However, the costs mostly exceed personal resources or even the resources of local communities; and indeed it may even be hard to obtain a loan within the family.

Difficulties with obtaining credit, or the often high costs of servicing it exert a distinctly negative impact on the agricultural sector. The statements made by farmers suggest that lack of capital is one of the most serious problems they encounter. It is usual for around 10-15% of Peruvian farmers to be in a position to obtain a loan, and it is commercial banks, savings banks and cooperative banks that they make most use of, though in some regions NGOs also have a key role to play.

In the case of the Sierra de Piura there are various possibilities like in the southern departments of Piura province NGOs are more active and there are a great number of projects enjoying their support. In contrast, there are few such examples within the study area, and where they are present the objective is mainly the improvement of residential conditions, at least through the building of separate bathrooms. Human capital. There is particular value associated with the status of skilled artisan or exponent of various different handicrafts. The presence of such people makes it possible for many goods to be made on site. This applies inter alia to woollens like ponchos, caps, scarves, sweaters and blankets, whose production involves the local womenfolk. In contrast, men are engaged in producing building materials, the local houses being made of the non-baked adobe bricks fashioned from clay, turf and water. Once these ingredients are shaped into blocks, they are sun-dried, before being used in the building of homes and other structures by those intending to live in them or otherwise use them (see fig. 3, 4, 5).



Fig. 3, 4. Preparation of construction materials (adobe) by the farmers themselves.



Fig. 5. The women is making poncho for her daughter.

The use of home-made bricks is widespread, and few of any other building materials are used in the construction of houses, which are only furnished modestly. Apart from beds, there are main tables and some benches, but few of any examples of other kinds of furniture. In no way can this kind of equipment in the home be regarded as an asset, therefore.

5. CONCLUSION

The pilot studies carried out to date in Peru's Sierra de Piura sustain the conclusion that traditional assets at the disposal of local communities in rural areas continue to play the most important role in the process by which these areas are transformed and develop. The role of local authorities has not yet been taken account of because interviews on this are to be run in the course of the next visit to Piura.

Aware of the assets they possess (be these in the form of land, water, tools or close social ties) the rural

Table 1. A proposal for the categorisation of strategies [4].

population is adopting strategies capable of bringing about a stabilisation of development that will stand in the way of any lowering of living standards, while providing for an assumed slow process of modernisation. Summarising the above analysis in line with the concept considered by Köberlein (2003), it is possible to use interviews as a main source by which to categorise types of strategy adopted by the rural population in the Sierra de Piura. The strategies referred to will be subject to further verification. In work carried out, Köberlein groups strategies as regards livelihood as in table 1. In contrast, in the case of the Peruvian province under study and the municipality of Frias it can be noted that the inhabitants have only accepted some of the aforementioned strategies.

Strategies	Improvement	Alleviation	Overcoming
Objective	Growth	Security	Survival
Means of achievement	Investment in assets	Diversification of assets	Exhaustion of assets
Means of arriving at a	Thought through,	Through awareness,	Spontaneous, in the face of a
decision	calculated	anticipation	lack of awareness
Stimulus	Opportunity availed of	Threat/endangerment	Case arises "out of the blue"
Adaptation to threat	Ex-ante	Ex-ante	Ex-post

Source: after Köberlein (2003, p. 53) cited by Didero (2009).

These have been marked in the table by bolding. A further part of the research coming under the project being run will entail analysis of the activity and efficacy of local authorities. The need for the provincialand district-level development plans imposed by the central authorities is forcing local government into a verification of activity to date as well as the selection of those projected actions that have gained the acceptance of the local population.

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