

SUSTAINABLE DEVELOPMENT OF A RURAL AREA IN THE FACE OF PRESSURE FROM LARGE TOUR OPERATORS? THE EXAMPLE OF PERU'S COLCA CANYON

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ABSTRACT: In 1981, Polish canoeists (members of the Bystrze Academic Travel Club) made the first journey along the waters of the River Colca in the section located in Arequipa Province (Peru), along which the waters flow in a deep canyon. Information on this sporting achievement – and a description of the Canyon and its surrounding area filled the Peruvian press and tourist publications around the world, ensuring that the Colca Canyon became one of the most important goals for tourists anywhere in Peru from that time on. However, mass influxes of tourists, noisy trips, the development of hotel infrastructure and other items required in tourism have generated permanent change in the character of the Colca Valley, and done much to influence the lives of its inhabitants.

KEY WORDS: sustainable development, rural areas, Colca Canyon, Peru, the role of tourism.

INTRODUCTION

The Andes, which are young fold mountains, stretch north-south for the whole length of the South American continent. They actually constitute the typical landscape feature in states in the western part of South America – from Venezuela as far as Chile, and they are divided into three parts. The mountains in Peru are known as the Central Andes, and it is here that the range is widest, at times reaching 800 km across. The Central Cordillera of the Peruvian Andes do not even make a distinct mountain chain. Rather, there are a series of mountain massifs here, separated by river valleys, including that of the Colca (Makowski 2004). This combination of steep slopes and valley bottoms began to be used for livestock rearing and crop cultivation in pre-Hispanic times, while today a beautiful landscape of valleys and peaks attracts tourists to these areas in ever-greater numbers (Fig. 1).

Since the end of the 20th century, work concerning rural geography and agriculture whose subject matter comprises rural areas in developing countries has emphasised

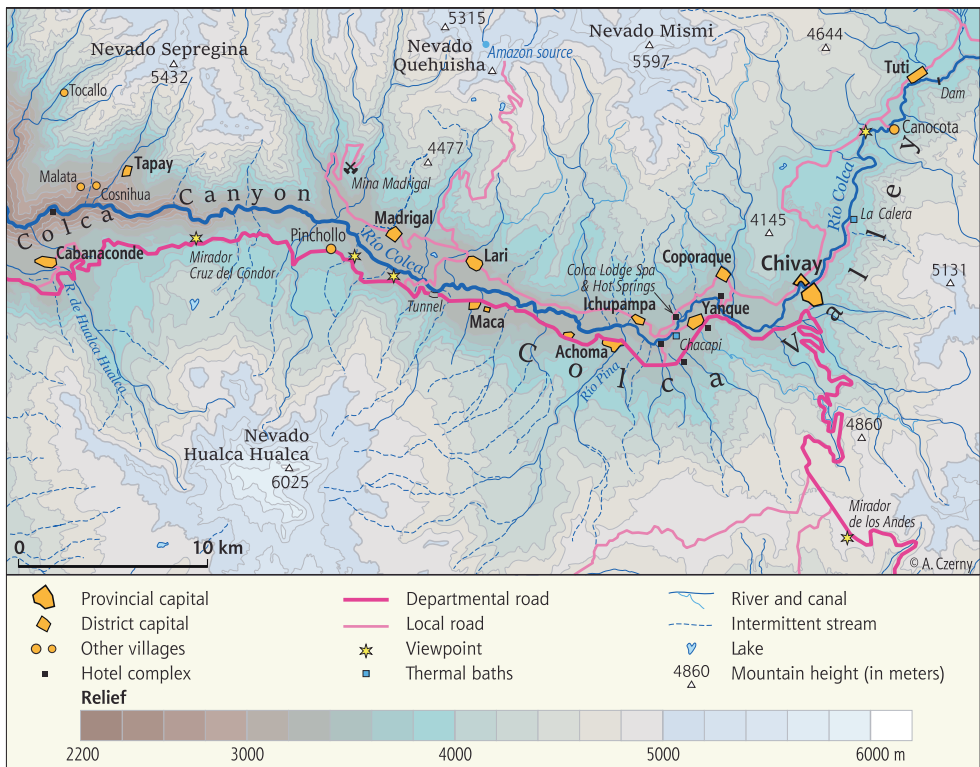


Figure 1. The map of the Colca Canyon (by A. Czerny)

the importance of diversified economic activity and labour markets when it comes to raising the income-levels of the rural populace and improving their living conditions. It was in this context that there arose the term multifunctionality of agriculture and rural areas, which offers a good reflection of the main thrust to the ongoing academic debate. And today, the development of non-agricultural functions within the economy of rural areas, as well as the need for a wide range of social functions to be retained, is regarded as key in assuring country-dwellers of an improvement in their standard of living. As Wilkin notes, better perception and fuller appreciation of the links between farming operations and the (natural, cultural and social) environment are of assistance, not only as principles of sustainable development are pursued actively, but also as efforts are made to overcome urban-rural disparities in levels of opportunity (Wilkin 2010).

But can mass influxes of tourists into places with particularly valuable natural or cultural features (in which the protection of the latter should nevertheless represent the main objective of local-authority policy) really provide for the proper implementation and pursuit of strategies for the sustainable development of rural areas? In the view of this article's authors, the use by tourists of Peru's Colca Canyon has done little to generate significant increases in income amongst the rural inhabitants in that area, with those gaining most from the recent arrangements originating outside the region, mainly in Arequipa (as the nearest large city in the country). Indeed, even in employment terms, it can be seen that only a small group of local people actually work in the tourism sector. The development of tourism here would thus seem to have taken place in non-conformity with the principles of sustainable development.

RURAL AREAS AND THE DEVELOPMENT OF TOURISM

For several decades now the development of tourism has been perceived as a key way in which the socioeconomic situation in rural areas might be improved, with additional income for local authorities coming in as a consequence, and new job opportunities made available to local people. These issues have been the subject of a great many studies, in which particular attention has been paid to the role tourism can play in local development in the countries of the so-called "global South" (Córdova Aguilar 2003). The consequences of new investment and developments in the tourism sector are being analysed by geographers from the point of view of many different research concepts and approaches. Indeed, there are too many ways of considering the development of local areas and the role tourism plays in that for any brief description to be possible. However, there can be no doubt that matters of key importance for geography revolve around the linkage between local development, the development of tourism and sustainable development; as well as the multifunctionality of rural areas, livelihoods and quality of life in the countryside (Czerny and Córdova Aguilar 2018).

In analyses considering the multifunctional nature of rural areas the matter considered central is the diversification of economic activity, the putting in place of an

environment suitable for both farmers and country people not involved in farming, the revitalisation of rural areas, and work to meet expectations of stakeholders involved in rural development (of which a great part do not actually live in villages at all). At the same time, those promoting multifunctional agriculture are also striving to reconcile agriculture's pursuit of commercial functions arising out of activity in a competitive business environment with desired non-market functions reflecting valuable features a given community holds dear.

The vitality a rural area displays is very much dependent on the capacity of inhabitants to self-organise, as well as on the success achieved with the development of institutions that act in support of multifunctionality – of both rural areas in general and agriculture in particular. Mańkowska notes that improvements in living conditions in rural areas are crucially dependent on the creation of jobs in professions outside agriculture, if associated with it in some way, or operating in the vicinity of it. This effort will also need to be supplemented by the installing of conditions that make achievement of these good intentions possible in reality, e.g. through the development of technical and social infrastructure, stimulation of activity in local circles, the decentralisation of decision-making and the introduction of a system responsible for order, and so on (Mańkowska 2002). The multifunctional development of rural areas thus denotes an ongoing process of differentiation of local non-agricultural labour markets. The sense of the concept thus boils down to greater diversification of kinds of employment, and hence also of sources of upkeep locally, with this ultimately adding up to – or at least heading in the direction of – sustainable development.

The evolution of that concept of sustainable development has led from approaches solely (or almost solely) dealing with conditions in the natural environment and the need for that environment (i.e. air, waters, soil, natural resources and so on) to be protected, in the direction of an approach that integrates life on many different levels with human activity, and most especially the valuation and protection of diverse elements of (natural, cultural and political) heritage. Another way of dividing up approaches to sustainable development is based on analysis of local and regional potential where the stimulation or continuation of growth processes is concerned. This introduces a critical analysis seeking out those ways of proceeding and those applied techniques giving rise to the most limited changes in conditions present in the natural environment (or this at least is the theoretical assumption), as well as the socio-cultural conditioning that is in place. It was in this spirit that work was carried out for many years within the framework of the Global Change Project of the International Geosphere Biosphere Programme (IGBP), with its new counterpart *Future Earth* now in prospect for the Polish Academy of Sciences.

The traditional approach to the sustainable development concept, focusing on environmental protection, did not take account of the actor in society who is an influence on the environment, and (yet) dependent on that environment for life and economic activity. New definitions of sustainable development therefore arose, in which the concept expanded to include humankind. This step forward was well conceptualised by Kalamucka, who wrote that: “sustainable development assumes the achievements

of economic objectives in connection with social ones, while the natural environment goes on being respected, though attention was above all paid to matters linked with protecting the environment” (Kałamucka 2017, 29).

But, considering the structure, and the main actors in sustainable development, is it possible to return to a simple model of development? In general yes, though one would need to add – in the cases of both human and economic capital – that the activity associated with these should be in line with the principles of sustainable development.

So what should it actually entail? Well, in general, there would be:

- an awareness (among all members of a given community) that any activity (intervention) whatever on the part of human beings present in geographical space gives rise to changes or – *in extremis* to destruction – in the existing natural environment;
- the utilisation, in all types of human activity, of techniques and technologies changing to the most limited possible extent the character of a given region – i.e. its environment, the skills of its inhabitants, customs, traditional forms of management, infrastructural support and so on;
- the securing of financial capital (an economic basis) that – when invested in the given region – takes care above all of the interests, wellbeing and environment for life of that area’s inhabitants.

In the face of that, can the development of peripheral regions in which strategies are pursued to the above end, give rise to an increase in people’s incomes and a raising of the quality of life, in line with the principles of sustainable development and thus still favouring the retention of existing natural and cultural features that are of the greatest value?

The quality of life is one of the subjects often taken up by social geographers. Córdova Aguilar states that this is a reflection of the economic situation a family or individual finds itself in at a given moment, which is to say that it is changeable over time (Cordova Aguilar 2001, 124). This is a phenomenon that rather tends to be perceived in an intuitive manner, with their being no definition of it from the scientific point of view. This is then a subjective feeling, and one that proves hard to analyse methodologically (Kałamucka 2017, 42). It will always need to be considered by reference to cultural values and social norms that assist with the development of the local economy. Overlapping with all that are the goals, norms, doubts and fears, aspirations, etc., that are different for people on different income levels and enjoying differing social status. If there is a lack of a single definition and means of measurement of quality of life in developed countries, how much more problematic is it likely to prove in countries of the global “South”, in which traditions, culture and social differences arising out of the colonial past and maintaining a lack of enthusiasm for indigenous peoples stand firmly in the way of anyone seeking to analyse quality of life in a scientific manner?

A definition apparently helpful as analysis is applied to countries of the global “South” is one given by Kałamucka, whereby the author accepts that quality of life is a relationship between needs and values felt to be important by the individual or group in society and the opportunities for goals relating to these to be met or achieved (Wiench 1987 after Kałamucka 2017, 67–68). Wiench also claims there is a certain set

of basic elements essential to the proper functioning of the human being, and including appropriate living conditions, human feelings, and the objective effects or impressions taking the form of different signs of individual or collective wellbeing. This leaves the quality of life concept linked irrevocably and unchangeably with welfare, i.e. the degree to which the needs of life and work are met; as well as with aspects of a residential, social, cultural and recreational nature, where these are seen to reflect the use of private and public space appropriately (Córdova-Aguilar 2001, 124).

In the case of yet-another methodological approach used by geographers to analyse local development, i.e. livelihood analysis, the focus is again on the individual and the household, which work to satisfy basic life needs of all members of a local community (De Haan and Zoomers 2005; Kimble 1960). Polanyi and Pearson (1977), adopting a purely economic approach, analyse links with maximisation of income, in so doing stressing the contextual nature of the economic activity engaged in by the individual or family, as conditioned by historical, social and cultural factors. The concept of livelihood in turn assumes that the way of life of the individual, the family and the local community arises out of access to material and non-material resources, of which the package is made up of physical and economic resources, like local knowledge, social capital and cultural capital, as well as aspiration and creativity (Kałamucka 2017, 128). Institutions and binding legislation also influence livelihood. Entities in society may use existing resources at local level. The choice depends on natural and social factors. The different options that an individual or family may take advantage of arise out of the high level of complexity of the process by which a situation of crisis and shortage is adjusted to. The adoption of strategies in turn results from adaptation to a whole host of accessible resources that can be made use of today, and may also be accessible in the future. Account is also taken of the different scales on which several different phenomena can play out (Czerny and Cordova Aguilar 2014).

RURAL ALTERNATIVES IN THE PERUVIAN ANDES

Reactions and undertaken actions depend greatly on the decisions particular members of a defined community (or household) take. The ages of household members, as well as the gender structure, place in the traditional social hierarchy and other factors may all influence the decisions in question. The research hypothesis here thus contends that different social assets that influence decisions and behaviour defending people against crises and poverty can provide for the persistence and reproduction of the populations present in peripheral and marginalised regions over decades, even if the assets in question are not made full (or any) use of at present in the pursuit of development. Part of the reason for the latter circumstance is that the deployment of the said assets often encounters barriers (of an institutional, cultural or other nature) – as put in place by the global actors operating in the region. This is obviously a situation conditioned by under-development, and a low level of social and economic capital.

However, where regions are of interest to tourists, development may take place within two cycles that come into contact with each other at times, but sometimes also repel each other. The first cycle is obviously the global one, in which firms engaged in tourism may not include local assets in their sector; while the second is the local one in which local people seek to make practical use of the skills they possess, counting on influxes of tourists making a monetisation of assets (including those aforesaid specific skills) possible, with extra income generated, above and beyond that deriving from the traditional forms of management and land use. We will be seeking to use the example of the Colca region to show when and where these two cycles have their meeting points and come into contact with each other.

Peru is a country with an exceptionally rich history and fine monuments originating in both pre-Columbian times and the colonial era. However, for the tour operators, the key attraction (present in every excursion programme) is (the 15th-century) Machu Picchu. This is now true to the extent that even Lambayeque (with its superbly-preserved tomb from pre-Columbian times and modern museum built to display some of the contents) is only visited by a small number of tourists.

Peru's country-dwellers live mainly from agriculture, which still accounts for more than 70% of all those in employment; and the Peruvian countryside – notwithstanding the presence within it of numerous items of material heritage and attractive natural landscapes that do in fact attract tourists – bases its livelihood around farming. In the Colca Valley likewise, income mainly comes in from agriculture, even if mining was another rather important sector in decades gone by. Indeed, from colonial times on to the end of the 20th century, ores of copper, tin and silver were exploited here. However, small in size, these mines ultimately lost out in competition to their large counterparts in the La Oroya area.

The floor of the Colca Valley – at altitudes of around 3 300 m a.s.l. is occupied by cultivated fields. In turn, the highest-altitude villages are 3 700 m up in the so-called *suní* climatic and vegetational zone. These are Tuti, Sibayo, Callali, Conocota and Tisco (Pulgar Vidal 1996). Below that zone is the so-called *quechua*, present between 3 350 and 3 650 m a.s.l., with villages on the right bank of the river including Coporaque, Ichupampa, Lari, Madrigal and Tapay, while those on the left bank are Chivay, Yanque, Achoma, Maca and Pinchollo. Finally, the *quechua baja* altitudinal zone is the location for Cabanaconde (Robles Mendoza 2008) – Photo 1.

The Colca Valley's most important centre is Chivay (6 500 inhabitants), which is the capital of the province of Caylloma (with its 45 000 inhabitants) and the region's administrative centre (proyectos.inei.gob.pe/web/biblioineipub/bancopub/.../04005.xls). This was an agricultural locality until recently, with crop-growing and livestock-rearing engaged in here since pre-Columbian times. Here, the dividing-up of land into farming cooperatives was achieved later on – in 1971. The *raison d'être* of the rural community in the Colca Valley is joint control of land and other resources, like pasture, forests and waters used in irrigation. In order to gain registration, each cooperative had to prove that land was owned jointly by all members. Such a situation usually

applied at the highest levels in the mountains, beyond the limits of cultivation, where zones extend up from the puna (serving as high-mountain pastureland) to the peaks of the surrounding mountains. At lower levels – in this case on the terraces by the channel of the Colca – there have been and remain cultivated fields. The work here is done by different families as cooperative members. In turn, every peasant community in this valley preserves through to the present day the old tradition of dividing up yields into two parts known as the *anansaya* (top-down division) and the *urinsaya* (bottom-up division). The dual nature of the social organisation of these communities is manifested in different spheres of communal life: the dividing-up of cultivated land, the system of irrigation, obligations in public posts, obligations during fiestas and other celebrations, harvest time and work in the name of the community (Robles Mendoza 2008, 138; Treacy 1994). In Inca times, the communal land was to be found in various of the altitudinal zones from 1 200 to 3 700 m a.s.l. – in which cultivation of the so-called *espacio intermedio y bajo* prevails; as well as above 3 700 m (in the *alto de puna*) in which livestock-rearing (of alpacas, llamas and sheep) takes place. In this way, people sought to secure food supplies and guarantee continuity. So if frosts for example damaged the potato crop at high altitudes, maize might be gathered lower down, with this allowing the community to persist through to the time of the next harvest.

The development of agriculture here was possible through the establishing of cultivated terraces (as long ago as in pre-Columbian times) and the progressive installation of a field-irrigation system. Channels took water out on to the fields with the aid of a very refined distribution system. Traditionally, since pre-Hispanic times, the crops grown here are maize (*Zea mays*), potatoes (several *Solanum spp.*), oca (*Oxalis tuberosa*), mashua (*Tropaeolum tuberosum*) and olluco (*Ullucus tuberosum*) – mainly to meet local needs. Quinoa (*Chenopodium quinoa*), cañihua (*Chenopodium pallidicaule*) and kiwicha (*Amaranthus caudatus*) are also still important components of the daily diet, though demand from Peru's largest cities (and indeed as regards export) has grown, thanks to the increased interest in gluten-free food. The most popular plants cultivated today in Peru's mountain regions are the European-origin broad beans (*Vicia faba L.*), wheat (*Triticum sativus*), barley (*Hordeum vulgare*) and oats (*Avena sativa*). Out of a total of 10 025 ha of cultivated land in the Colca Valley, 9 640 ha are irrigated. This points to effective organisation of farm output so as to meet the needs of both local communities and the urban and export markets (Robles Mendoza 2008, 143).

THE DEVELOPMENT OF TOURISM IN THE COLCA VALLEY BUT SUSTAINABLY?

The region today forming part of the Department of Arequipa was densely populated and very well-organised in the pre-Columbian era. To this day, the view along the Valley is an impressive one, featuring thousands of cultivated terraces constructed

still-earlier, hundreds of years ago, and yet are still able to serve today's farmers as they engage in both arable and livestock farming. Unlike in other Andean valleys (such as that of the Urubamba), these terraces have been neither destroyed nor abandoned. Today they represent an important element of the cultural landscape in the Arequipa region (Photos 1–4).



Photo 1



Photo 2



Photo 3



Photo 4

Photo 1–4. The pre-Hispanic cultivation terraces in the Colca Valley are made use of to this day, and are painstakingly maintained and irrigated (photography by A. Czerny)

Photo 1 – The Valley of the River Colca near Maca; Photo 2 – The Valley of the River Colca near Maca; Photo 3 – The Valley of the River Colca, Achoma; Photo 4 – The cultivated terraces.

The Colca flows down from a source located at 4 000 m a.s.l., and makes its way to the Pacific Ocean along a channel some 450 km long. Its name changes as it does do. In the upper course this is the Colca, but in the middle stretch it is the Majes, and in the lower the Camaná. As was noted above, the tourist potential of the Valley (especially in its upper course) began to be uncovered in the early 1980s. The most interesting feature in the landscape is the section of deep canyon extending to the west of the small town of Tuti. This stretch is around 50 km long (Treacy 1994, 49).

In this region, beautiful landscapes, conditions to practice extreme sports, a rich flora and fauna, and items of material and non-material cultural heritage all represent premises underpinning the development of tourism. However, tourists did not reach

this region in years gone by, so local people had no possibility to build a livelihood within that sector. In 1984, Chivay – the main settlement in this part of the Valley and the place of overnight stay for many – had one hostel and two restaurants. The main guests were miners, as well as drivers of the trucks taking metal ores out of the mines located on the slopes of the Canyon (Córdova Aguilar 2003, 78).

By 2007, Chivay had 6 500 inhabitants, with the index for population growth in the inter-Censal period (1993–2007) being 3.8% a year – one of the highest figures to be noted anywhere in the province of Caylloma (INEI. 2011, 74).

According to data from AUTOCOLCA (*La Autoridad Autónoma del Colca*) – i.e. the public organisation founded in 1986 to promote the region – the number of tourists visiting the Colca Valley in 2016 had reached 254 000, with a strong upward trend continuing. A majority of visitors (144 400) are foreign tourists (especially French, American, German, Argentinian and Chilean) – AUTOCOLCA, 2007. The tourists from the Northern Hemisphere mainly visit this region in the European and American holiday seasons, which is to say the August-October period, while Peruvians come to the area from March through to July. In July 2018 alone, the Colca Canyon was visited by 17 500 tourists (<http://elbuho.pe/2018/02/01/valle-del-colca-siguesiendo-primer-destino-turistico-arequipa/>).

Once it was mainly canoeists who came to the Colca Canyon. There were no comfortable hotels or even restaurants for those paying a visit. Unfortunately, the completion of work on a developed irrigation system along the middle section of the Valley (the River Majes) led to changes in the upper course. The level of water in the river was lowered markedly, and its absence from certain localities made the organisation of canoeing trails impossible. However, from 1986 on, the Colca Valley came to be visited by more and more tourists using the area as a base from which to hike in the mountains. The AUTODEMA camping site was set up in Achoma, under the management of Mauricio de Romaña. Scientists then began to join the lovers of extreme sports in taking an interest in the valley.

AUTOCOLCA then came into being, with its activity focused on the utilisation of other valuable features capable of attracting tourists. Andean condors (*Vultur gryphus*) proved to be the greatest attraction, nesting as they do on the slopes of Ampato (at 6 300 m. a.s.l.) and occurring quite abundantly here prior to the “discovery” of the valley by tourists. The birds fed in the Canyon until the influx of tourists began to ensure ever-rarer appearances. So to maintain the presence of the birds – and turn them into a tourist attraction – a decision to engage in supplementary feeding was taken. Each day, around midday, meat is laid out on a rocky shelf for condors to eat. These hungry birds pay less attention to the crowds of people waiting to view them, and not even the considerable din these crowds are capable of making is enough to discourage these birds from flying in over *Mirador del Cóndor* – from which place observations of the giant birds can be made. Having engaged in this spell of birdwatching, tourists are taken to the baths with thermal waters at La Calera (some 4 km from Chivay). Sometimes they visit the Pinchollo geyser, and the Oasis de Sangalle.

Table 1. Numbers of tourists visiting the Colca Valley in 2005–2017

Year	Numbers ('000) of	
	tourists	foreign tourists
2005	103.9	83.3
2006	118.7	92.0
2007	122.6	91.3
2008	140.6	102.2
2009	146.8	98.7
2010	169.6	109.6
2011	175.0	119.6
2012	175.3	116.0
2013	171.8	116.9
2014	185.2	123.6
2015	205.2	132.3
2016	254.6	144.4
2017	255.1	158.0
Total 2005–2017	2224.4	1488.7

Source: <http://www.autocolca.pe/publicaciones/revista%20Autocolca%202017-4.pdf>, 29.01.2018.

Roberts noted that 70% of the tourists visiting the Colca Valley come there via Arequipa (Roberts 2016, 12–13). However, individual tourists seeking a convenient connection from Chivay will not find that easy. From the coach station in Arequipa only a few lines offer a journey into the Colca Valley, and this with only 2–3 runs each day.

THE REGION'S DEVELOPMENT IN THE EYES OF ITS INHABITANTS

The Colca Valley was visited, and interviews there carried out, by the authors, in 2014 and in 2017. The goal was to research the extent to which a greater influx of tourists was influencing the local economy, favouring improvements in living conditions and encouraging growth in income among local people. As interviews run in spring 2017 made plain, the main problem for the organisation of tourism in the Colca Valley is its seasonal nature, as well as ongoing shortfalls in infrastructure. Many small-scale providers of services complained about difficulties experienced with budgeting in a situation of this kind, as well as a lack of assistance (credit) forthcoming from financial institutions.

Roberts (2016) also noted that, as recently as in 2005, the level of satisfaction with tourist services in the Colca Valley as opposed to Arequipa was far lower. Hotels were

lacking, roads were in a very poor state, there were no toilets, and the serving of tourists by local agencies left a great deal to be desired. It was thus possible to speak at best of pioneering tourists coming into the area for the beautiful landscapes, but not expecting too much in the area apart from that (Roberts 2016, 14). Indeed, as recently as in 2014, Chivay had just a couple of poorly-served hotels.

Only since 2015 has it been possible to talk of a major improvement in the quality of tourist services, as well as an increase in their variety. A 2017 visit confirmed this trend.

For more than 10 years now there has been a Guides Association called the *Asociación de Guías Locales del Valle del Colca* (or *AVC*), with its seat in Chivay. By the end of the 20th century, local young people were already beginning to find employment as guides for groups of (mountain-trekking and canoeing) tourists. The larger tourist firms developing their activity ever-more intensively have run special courses for local people, most especially young men seeking to find employment in the tourism sector. NGOs also offer training to the inhabitants of Chivay and the surrounding area, making it easier for them to find work outside agriculture.

Thus, in the case of the development of tourist infrastructure, changes nothing short of dramatic have started to take place. This is in particular true of places to stay overnight. Two decades ago there were 2–3 pretty modest hostels here, but by 2014 a marked improvement in this respect was to be noted, with several hotels now in place, albeit of standards that were nothing special. The situation has changed further in the last three years, as hotels have started to be built by foreign firms in Chivay and in Valle del Colca, and that has meant the purchase of farmland from local communities as sites on which to build. For example, the Colca Lodge Spa & Hot Springs went up on what had been terraces along the Valley from pre-Hispanic times. It was on the same kind of site – in Yanque – that further hotel complexes came into existence. Apart from Chivay, it is Yanque that has become the place for the development of tourist infrastructure. The erection of 5 or 4-star hotels was supposed to encourage tourists to linger in the Colca Valley, given that a majority were spending just one night here, before returning to Arequipa. In 2017, Chivay and the surrounding areas had 46 hotels and hostels, of which two were 5-star, three 4-star and 17 three-star. However, the interviews show that, the more luxurious the hotel, the smaller the number of local people able to find employment there. The major international chains bring in their own staff, not taking on people from the small villages along the Colca Valley.

Smaller hotels and restaurants are mainly in local hands, though several in Chivay, (including the Colca Inn) are foreign-owned. Recent years have seen demand on the part of European tourists met by higher-standard hotels also located in Chivay.

In recent years, more new restaurants have been established, especially by the market square – which has been made over, with the streets leading to it paved. Local people are more and more likely to find work in restaurants that belong to Chivay inhabitants or people from nearby settlements. The owner of a café by the square (who obtained an award from *AUTOCOLCA* for the high quality services offered) has been running it for 5 years now. The January–February period always proves very

difficult for him, as no foreign tourists come in, while there are not many domestic ones either. Where gastronomy is concerned, the most favourable periods are around national and/or religious holidays. Custom is also good on market days in Chivay (which means Mondays and Tuesdays). In turn, the European holiday season of July-August again sees the town thronged, if “in this case” by tourists. In general, development of the economy in Chivay is only occurring slowly, as tourists tend to pass through, not necessarily leaving much money as they do so. Progress in fact tends to be more associated with the better economic situation in the country as a whole. Many small firms offer trips, transfers and visits organised into the Valley with a guide. However, as most who visit do so out of Arequipa, on organised tours, the number of clients for small local firms is limited.

Those inhabiting the surrounding mountains perceive Chivay as a dynamically developing local centre, in which work can be found, along with better conditions for living than exist in rural areas. Indeed, the very poor-living conditions present in mountain settlements ensure Chivay’s treatment as a better place in which to live. The threat posed regularly by frosts and droughts ensure that harvests are often poor, and this only of course serves to leave a family’s livelihood more precarious. People therefore abandon their small, unprofitable plots of land and move here. Just as people from the Puno region come to Arequipa, so they also make it to Chivay. Indeed, immigrants from the mountains often displace the inhabitants of the latter from the labour market, especially when it comes to engagement in work of a very simple nature that does not require any particular qualifications.

Notwithstanding the growth in the significance of tourism to the region’s economy, the key source of upkeep for inhabitants of the Valley remains agriculture. Arable land here is located on terraces that were created around 1 400 years ago. The main crops are potatoes, which can be dried into the *chuño* form and then used over many months. There is also a huge role for both broad beans and peas growing in the mountainous parts of Peru – these are in fact vegetables brought in by the Spanish that nevertheless adapted very well to Andean conditions. Then there are the 35 varieties of maize grown, as well as the 35 kinds of quinoa. Fields are well-maintained and tended. The Valley includes small retention reservoirs used in irrigating the fields. Where there is more water (enough to irrigate pastureland), dairy cattle are raised. Sheep are further livestock in the area, though numbers are small and designed only to meet own needs. The home production of cheese for sale is a rather well-developed sideline. The cooperative that once produced the cheese went to the wall, so now each household individually produces it, with a view to going to Chivay on market day to sell it (Photo 5). We did our interviewing in January – a time of the year in which work out in the fields can be very intensive. It was possible to see whole families out there digging up potatoes or picking broad beans (Photo 6).

At the aforesaid market in Chivay the main types of produce on offer are potatoes (many species, plus *chuños* – i.e. the white or dark dried potatoes referred to above); maize (in the form of cobs, grains, fine- or coarse-ground grains and so on); fresh or

dried broad beans, and lucerne (which is used to fatten up guinea pigs – a delicacy among inhabitants of the *Altiplano* since the days of the Incas).

The cultivated terraces are a characteristic feature of the Colca Valley's cultural landscape; and – given their usefulness in agriculture – it would seem obvious that extra special care to protect them ought to be taken. But “seem” is the operative word, as pressure from the large hotel chains ensures that extensive hotel complexes are being erected here more and more often. This means that the cultural landscape attractive to tourists is being destroyed with a view to the latter being accommodated. The existence of large tourist complexes obviously also increases the use of water ... and the pollution of the river. Hence, the potential benefits to inhabitants of these new developments do not really materialise, while serious environmental problems are generated.

Tourist traffic in the Canyon is organised and monitored by *AUTOCOLCA* (the state agency for the development of the Colca Valley), which imposes fees for trips into the Valley. At present (in 2017), the fee amounts to 70 soles (around \$30) for foreigners, as compared with 35 for Peruvians. The fee encompasses the opportunity to take a trip along a road from which the cultural landscape of the valley (the extensive cultivated terraces) can be admired, while key stops are the viewing points from which Andean condors can be seen (around midday, as they fly in to take advantage of the supplementary feeding) – *AUTOCOLCA*, 2017. Were this food not available, the birds would most likely fly off as far as possible from the loud-mouthed, over-excitable tourist parties. And then tourists would not visit the Colca Valley in such numbers. These days, there are few who undertake to hike along the valley. In contrast, tourism based around thermal springs is a draw, allowing tourists to take a break and bathe following a visit to the nearby towns. However, observations suggest that the tourist traffic in Chivay and the other small towns is in fact of rather limited scope. Coach loads of tourists en route to the viewing point called *Mirador del Cóndor* stop over for a while in Chivay, and then in Yanque, where displays of *wittitis* dancing are put on. Following the visit to *Mirador del Condór*, tourists most often spend the night in one of the luxurious new hotels, in order to return to Arequipa the next day. There are not too many tourists making their own way here – in January 2017 in the centre of Chivay we only came upon a couple of these. People would like more tourists to make it there in this way, as that would help along the possibility of a job in tourism becoming a main source of income. In fact, this small town has plaques up everywhere offering tourist services and proposing tourist excursions that could be made. There are a particularly large number of these in the pedestrianised precinct along which most of the town's main hotels are located, which leads from the centre to the river and bridge.

Crafts are only poorly developed here. A few people are involved in making things from wool (a popular activity in the *Altiplano*) – Aronés Ochoa, 2014. The characteristic outfits of women here are a skirt and jacket made of wool and with colourful embroidery, as well as similar hats, likewise embroidered. It takes a whole week to sew and embroider a folk skirt, while one such with fairly simple embroidery can cost around 500 soles (some \$150). However, a richly-embroidered item of clothing of the same kind will

entail expenditure of perhaps 800 soles. Larger orders for these kinds of outfits come from song-and-dance ensembles, which bring together many inhabitants of small towns.

While in Chivay and other localities on the left (south) bank of the River Colca the tourist traffic is quite visible, and does bring at least some benefits to inhabitants, the right (north) bank of the river supports a lifestyle of the kind that existed before. Indeed, time seems to have stood still here, with nearly everybody working in farming. The villages here receive no tourist visits. Yanque boasts a bridge over the Colca, and alongside that a kind of spa with thermal waters has been set up (Photo 7).



Photo 5



Photo 6



Photo 7



Photo 8

Photos 5–8. The right bank of the Colca, where agriculture is developed. Tourists do not reach these parts, and the inhabitants here rely solely on agriculture (photography by M. Czerny, A. Czerny)

Photo 5 – High in the Andes, on the Altiplano are grown sheep and alpacas; Photo 6 – Families picking broad beans; Photo 7 – The thermal baths in Chacapi; Photo 8 – Tapay: a former mining settlement on the right bank of the Colca.

Only a few people cross the bridge in order to visit Ichupampa and see the ruins of the Colonial-era church destroyed at the time of the powerful 2016 earthquake. Beyond that, the locality of Madrigal is a former mining settlement inhabited by miners working in nearby gold and silver mines. Today, the mine is closed and the settlement deserted, while the mine workings have left the local soil highly contaminated with chemicals that still pose a serious problem for agriculture in this part of the Valley (Photo 8).

CONCLUSIONS

In recent times, Peru's authorities have made considerable efforts to set limits on numbers of tourists visiting places that can boast particularly valuable natural and cultural features, such as Machu Picchu. This recognises the way mass-tourism can threaten existing objects that are often on the list of UNESCO World Heritage Sites. It is nevertheless very difficult to do much to limit numbers of people visiting, and the pursuit of any genuine policy of sustainable development is not favoured by the fact that many different actors stand to benefit as the tourist sector is developed.

In turn, the example of Peru's less well-known Colca Valley allows conclusions as follows to be drawn:

- the numbers of tourists visiting the Valley and seeking to admire its condors long ago passed any reasonable threshold that would continue to ensure peace and quiet and sensible behaviour at the viewing point – today's picnic atmosphere leaves this form of nature-watching out of line with the true principles of sustainable development, with insufficient care to preserve this place's valuable natural features being taken;
- developers have basically destroyed the cultural landscape constituted by the pre-Columbian valley terraces, as well as the diversity of crops once grown on them; yet adherence to the true principles of the sustainable development concept would seem to rule out hotel-building on such a site (permitted though this was by local authorities);
- the loss of land sustained by local communities has not been compensated for to any great extent, with local people not really being able to count on much employment in the buildings that have been erected, and so instead being inclined to leave their village and head for Arequipa in search of work;
- a huge threat to existing landscapes is posed by worsening water pollution, as sewage discharges into the river, which is also contaminated by runoff from irrigated fields;
- while the development of tourism raises expectations among the inhabitants of surrounding villages that their lot might improve, the chances of this happening relate to a small number of people only, above all those who have taken the course for guides and have now obtained employment in the local tourist agencies.

When it comes to sustainable development in the Colca Valley, use of the term must regrettably be confined to the farmers cultivating the land here, basically in line with the concept's core principles. But that is activity only capable of ensuring a very low income, given that fields remain too small for agricultural output to yield much of a financial surplus.

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