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Climate Change and Transitions Towards Living Well in South America

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The evidence of changes in the global climate is overwhelming, and the need for a radical change in energy sources is evident. These positions are in constant confrontation with conventional ideas about development, behind which lie the aspirations to lifestyles based on the models of technology, comfort and consumption of the industrialised countries. If we are to take the necessary measures to stop climate change, a good part of the fossil energy sources cannot be used, as even the International Energy Agency now recognises (IEA, 2012) and renewable energy sources are not sufficient to cover expected energy demands if we follow the current tendencies (Honty, 2014).

This all points to the need for a substantial change in how energy is handled, and with it our ideas of development. This is inevitable, as conventional ideas about development are very closely linked to energy use. These alternatives to conventional ideas about development are being intensely debated right now in South America. It is from this perspective that the Andean countries are highlighting proposals presented as Good Living (or Living Well). The original form they took was a pluralist set of positions that, on the one hand, presented radical criticisms of conventional development, and, on the other, proposed alternatives committed to people's quality of life and a broad-reaching sense of community that includes the environment and the protection of Nature, recognising that Nature also has rights. It is a position that expresses other wisdoms and sensibilities in the relationship between human beings and our environment.

This article explores some of the central ideas being discussed in a process of energy transitions towards Good Living for the Andean regions and the neigh-

bouring Amazonian areas. It is an exercise in proposing post-carbon societies based on sensibilities that seek to get out of the trap of conventional ideas of development, and a number of different organisations and social movements are taking part.

The concept of transitions

Living Well seeks alternatives to the ideas of development in all of its forms. It is a complex and difficult commitment, as the myth of development is deeply rooted in our social imagination. This is one of the reasons why we recognise that this change will be gradual and why it is presented as a series of **transitions**. This position can also be explained by the very characteristics of Living Well, in that it is an alternative that should be adapted to each social, historical and environmental context, and must therefore be built democratically and without impositions.

From within this framework, the transitions towards alternatives to development are defined as a set of policies, strategies and actions that approach the impacts and problems of the current conventional development, with a view to seeking a way out of this condition by adopting alternatives that go beyond development. The aims can be summarised in the slogan: zero poverty and zero extinctions, with both aims at the same level in the hierarchy.

This article will present the transitions for the Andean-Amazonian regions of Colombia, Bolivia, Ecuador and Peru, and the Western Amazonian areas of Brazil. It considers the problem of climate change in all its facets, from the addiction to hydrocarbons to deforestation, understanding these as parts of conventional styles of development. Based on that understanding, alternatives are proposed that enable these problems to be reversed, wiping out the factors that cause them and the political and cultural conditions that make them acceptable.

On the one hand the aim is that these countries reduce or eliminate their participation in global emissions. This means eliminating or drastically reducing the enormous volume of energy or resources extracted from these countries, such as hydrocarbons, that are exported to other continents where they will be used or burnt. It also means reducing the emissions produced by each country, with special attention to those caused by deforestation, agriculture and other changes in the use of the soil. It is common that Latin American governments are insistent about greenhouse gas emissions coming from the energy or transport sectors, such as the gases released by factories or vehicles, forgetting that one of the principal sources of these gases is in rural areas. The transition to a post-carbon condition will therefore require substantial reforms in agricultural and land-use strategies.



Policies for transition

In the transition process, energy policies need to be approached in different areas and sectors, on both the supply and demand sides. In the transitions, the ecological limits of the planet Earth are the unequivocal framework for the development of life, the economy, and human societies. Energy use is currently surpassing those limits, and the main aim of energy policies for the transition therefore seeks to reduce energy consumption on the demand side and convert to sustainable renewables on the supply side. This requires a series of policy

decisions, applying some novel measures and going deeper into others that are already being implemented. As an example we offer some of the measures being taken in the energy sector and in land use, and the changes that need to be effected across the continent. These measures are outlined and commented upon here separately, however, it should be remembered that they form part of an organic and interdependent whole that includes other components that exceed the scope of this article (Gudynas, 2011)

1) Policies for energy supply

The transitions focussed on primary energy supply aim to reduce consumption and move away from non-renewable to renewable sources.

Moratorium on new oil fields. The suspension of new explorations and the exploitation of hydrocarbons in confirmed or possible deposits, in the Andean and Amazonian regions, and on the Pacific Coast. The proven reserves of fossil resources contain more carbon than can be emitted if we are to avoid dangerous climate change. There is therefore no sense in increasing the size of these reserves as, according to the International Energy Agency, only a third of them can be used if temperature increases are to be contained below 2° C (IEA, 2012).

Social and environmental regulatory framework. The measures outlined above are contained within a regulatory framework that is both social and environmental, and which must be applied effectively and rigorously to all undertakings to obtain energy resources or that affect land use. Three possible situations are contemplated: undertakings that will be prohibited due to their high social and environmental impact; those that can be reformed in order to reduce these impacts to acceptable levels, and those that are within the environment's capacities for buffering and recovery. For example, oil fields should be assessed, and certainly some should be shut down because of the grave impacts they have, and others may perhaps be reformed according to ecological conditions in order to continue operating. In the same way, measures such as permitting

oil exploration in protected areas, as the Evo Morales government (Bolivia) has just done, are unacceptable from the point of view of the transitions.

Redirecting the use and trade in hydrocarbons. As a consequence of the measures outlined above, the availability of hydrocarbons will be reduced to those produced by the sites that continue to operate. The final destiny of those hydrocarbons may be very different from what it is now, as it is massively exported to global markets. In the transitions, priority will be given to attending to national needs, in the first instance, and then to the regional needs of South America.

Price correction and a review of perverse subsidies. The price of crude oil or natural gas must be reviewed, as it contains enormous distortions. These prices must be corrected in order to internalise the environmental and social costs of the extraction and transport of fossil fuels. The many and perverse subsidies given to the extraction and consumption of hydrocarbons, which amount to more than US\$ 500 billion per year (IEA, 2013), must be dismantled. Measures such as the tax exonerations offered by the Evo Morales government (Bolivia) to the oil companies are simply not possible under the transitions. This correction of hydrocarbon prices will lead to a reorientation of investments on the energy supply side towards renewable sources

Tax reform and State spending. Important changes are necessary in the taxation, tariffs and other tithes applied to extraction activities. Among the examples referring to climate change and energy we would highlight the need to review the taxation of energy, increase taxes on sumptuary energy consumption, and taxing excess corporate income where appropriate, etc.

Environmental and territorial control and management. The transition measures are articulated with other measures that seek to ensure that the appropriation of natural resources takes place within the biocapacity of each country and region. Among the most common instruments are requirements for environmental quality, environmental impact assessments, or territorial planning and land demarcation.

2) Policies for energy demand

At the same time, these transition measures also contemplate substantial changes in the demand for hydrocarbons. This is vital for reducing our greenhouse gas emissions, and for dealing with cuts in the availability of energy resources, and the challenges of getting out of oil. The measures we propose are focussed primarily on transport and industry which create the greatest demand for energy in the region.

Changes in Transport. Investing in more efficient and more effective public transport systems and policies, results in savings in currency (in the case of countries



that import oil or derivatives) and infrastructure, reduced local contamination, traffic decongestion and, above all, improved mobility for the sectors of the population with least resources. Territorial planning will enable a reduction in road transport and encourage rail and river transport. Furthermore, in the major cities a moratorium on auto mobiles is proposed, with the exception of taxis, rental cars and other service vehicles (such as ambulances or police patrols).

Changes to industry. It is fundamental that standards of obsolescence be established for the different goods produced, and planned obsolescence should be prevented. This is because a short useful life of industrial products is a determining element of society's demand for energy and materials.

Although various systems exist for "labelling" products such as lamps, electric and gas appliances, etc., these are merely indicative, and do not impose restrictions. That is to say, they indicate efficiency to the consumer, but they do not impede or "punish" the production and consumption of inefficient goods. The transitions therefore impose efficiency norms, including promotion and punishment mechanisms and even establishing minimum energy efficiency standards for the production and commercialisation of certain goods.

The transitions support the use of *recycled and renewable materials*. These are measures that currently permit savings of around 10.7 million barrels of oil per year. Recycling materials such as aluminium, for example, requires only 5% of the energy consumed in its primary production (UNEP, 2011). In this case, measures are applied to promote, punish or limit products according to their use of renewable or non-renewable resources for their production.

The recycling of waste and closed systems will be promoted and given privileges, as a way of reducing the demand for materials and energy in their production.

In this case, it is also necessary to *internalise the externalities* in the price of manufactured goods. We should remember that the industrial sector is responsible for 17% of health problems related to air pollution, with costs associated with damage caused by air pollution equivalent to 1-5% of global GDP (UNEP, 2011). It is only if these costs are internalised into the prices that the various measures outlined above will be economically possible.

Changes in housing. The architectural design of a building determines the energy it uses throughout its useful life. Thermal efficiency, lighting, sanitation systems, height, sunlight, etc. all have an impact on the daily energy bill for their users. The transitions are therefore based on the regulation of the construction, structure and function of these buildings, in order to ensure the best possible energy savings. This sector is also a major source of demand at a global scale, and its regulation may therefore have a positive impact in reducing in the extraction of

natural resources. In the residential sector, regulatory and financial instruments will also be applied, some of which are already mentioned above, and others that will, for example, favour giving credit to energy efficient homes.

3) Policies in the Farming and Livestock sector

One of the substantive contributions to greenhouse gases coming from the Andean and Amazonian regions comes from land use. The transitions must therefore attack this problem with determination.

Stopping deforestation. The surface area of natural forests should be frozen everywhere in the region, both in the Amazon, and in the other Andean environments. This can be achieved combining adequate monitoring and controls, land demarcation and zoning, regulation of the productive and commercial chains that affect forests (particularly, timber and livestock farming), and where possible, the use of silvopastoral practices (integrating pasture with trees).

The reconversion of farming. The farming and livestock sector has become increasingly dependent on products that use oil and natural gas, such as fertilizers and pesticides, but also irrigation systems and machines. This means it is necessary to reconvert in order to reduce dependence on fossil fuels, towards agro-ecology or organic agriculture, reducing the chain of events that leads to the arrival of new livestock farmers in the forests, and reorientates production and consumption towards local demands, as a way of reducing transport requirements.

4) International Policies

Autonomy in the face of globalisation. Many of the transitional measures imply recovering autonomy in the face of international markets. That includes reorientating hydrocarbons or food production to national and regional needs. In this way, the transitions propose a selective disengagement from global processes, placing emphasis on trade between neighbouring countries. This supposes a radical change compared to the current integration which is geared toward the export of energy resources and raw materials to global markets.

Autonomous Regionalism. The transitional measures indicated above make it clear that there must be a deeper and more genuine integration between the countries of the Andean-Amazonian region. These should, for example, coordinate the internalisation of the social and environmental costs into the price of raw materials in order to avoid unfair competition between the countries, complementing their food production and sharing their energy resources. This requires common policies between these countries on energy and farming, and a new design for the articulation of infrastructure. This is a radical change in respect of the current integration that emphasises the export of raw materials to international markets. The transitions seek links that are autonomous of these global impositions.



Open alternatives

By way of a final reflection it is a good moment to insist that we have a growing number of alternatives at our disposal that are adjusted to a decarbonisation with both improved protection for biodiversity and a decent quality of life. The most promising of these alternatives require seeking political and economic planning that goes beyond any version of contemporary development. Faced with these options, rather than minimizing and hiding these alternatives, they should be highlighted, applied and strengthened, in order to adequately face the planetary ecological crisis that threatens us.

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