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RECONCILING DECENT JOBS AND LOW CARBON ECONOMY: AN IMPOSSIBLE TASK? (DRAFT FOR DISCUSSION)

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Reconciling decent jobs and low carbon economy: an impossible task?

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Abstract

This paper focuses on the interlinkages between SDG Goal 8 on Decent work and Economic growth and Goal 13 on Climate action and the Paris Agreement. Through an interdisciplinary lens, the paper critically reviews the conceptual frameworks underpinning the two policy agendas, pointing to the trade-offs and incompatibilities in the short and long terms and elements that sustain positive externalities and synergies. The main focus is to assess the current state of conceptual and policy incoherencies inherent to these objectives. The evolving concept of Just Transition, connecting the concepts of Climate Justice and Social Justice is analyzed. The main purpose is to map and assess the policy proposals and innovative solutions for social and institutional engineering needed to cushion transitions for those whose jobs, livelihoods and well-being are affected by transition to the green economy. The paper points to policy issues that deserve further research and practical experimentation identifying and addressing conflicting interests with equitable outcomes.

Introduction

Three decades have passed since governments and scientists started meeting and alerting to Climate change. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was established, followed by annual international negotiations through the Conference of Parties' (COP) annual meetings. The Paris Agreement concluded in 2015 represented a major breakthrough in providing a global response to the threat of climate change. The key provision of the Paris agreement is to keep a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. As of April 2019, 185 parties had ratified the Paris Agreement. Parties to the Paris Agreement are expected to prepare, communicate and maintain successive nationally determined contributions (NDCs) to curb greenhouse gas emissions.

The same year as the Paris Agreement, the United Nations 2030 Agenda for Sustainable Development was launched representing an ambitious transformative agenda structured in 17 Goals. This paper explores the interactions between the two agendas of environmental transition and sustainability, as embedded in the Paris Agreement and Goal 13 of the 2030 Agenda “*Take urgent action to combat Climate Change*”, and of full employment, as embedded in the Goal 8 “*Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*”. These interactions, synergies, incoherencies, conflicts and trade -offs at the global and national levels, can be analyzed from multiple perspectives.

While in the past few years, several studies and policy reports have emphasized the synergies at the aggregate level and in the long term, in this paper, we argue that recognizing and focusing on the potential conflicts can help forging equitable solutions with the objective of “*leaving no one behind*”, and in particular leveraging the much needed political and societal buy-in to pursue both agendas.

Jobs and Environment: multi-layered linkages

The interactions between jobs and environment are multiple, complex and multi-directional.

Net carbon neutrality by mid-century, the objective of the Paris Agreement can be achieved only through a major transformation of energy systems and structural changes to economies. Structural changes of this scale and within the limited time horizon are bound to create major disruptions in employment and livelihoods. We know from historical examples of the industrial revolution, or the digital transformation which is still unfolding, that structural shifts entail large scale changes in the sectoral composition of the economies, in the reallocation of capital and labour and distribution of income and assets. They affect the demand for labour and skills. The adjustments can spread over generations, often entail considerable human and social cost which in turn, through conflict and cooperation, can lead to new social engineering. The difference this time is that the structural change is not driven by technological transformations alone, but purposely planned within an urgent timeline. Importantly, these changes occur in a context of slowdown in growth, recurring job crises (the 2008 financial crisis and currently of COVID-19) and major global deficits in employment, decent work and social protection.

Under “the business as usual” scenario, climate change and environmental degradation, through their various manifestations, threaten jobs and livelihoods, in particular for the poorest and most vulnerable.

It is estimated that jobs and livelihoods of more than 1.2 billion people and 40 per cent of total world employment depend directly on the ecosystem. Most of these jobs are in agriculture (80 per cent), forestry and fishing (5 per cent), food, drink and tobacco (6 per cent), and the wood and paper, renewable energy, water, textile, chemical and environment-related tourism sectors (9 per cent). (ILO 2014 and 2018). We should add to these numbers millions of other jobs and livelihoods that rely indirectly on the above activities.

Environmental degradation- whether cast in the level of GHG (green house gaz) emissions and the resulting climate change, natural resource scarcity, air and water pollution, soil degradation, biodiversity loss, desertification, and other dimensions, damages health, economy, jobs, livelihoods and well-being (WHO, 2005, Kumar, 2010; Suich, Howe and Mace, 2015).

In response and often for their immediate survival, population directly concerned can further exacerbate environmental degradation.

The impact is particularly significant on agriculture and fisheries. The environment is a direct source of food and energy for people in poverty and agriculture employs around 1 billion workers, often without decent conditions of work (ILO, 2016). Air and water pollution, and overexploitation of soil and fisheries are some of the sources of environmental degradation that threaten productivity in the agriculture and fishing sector.

The greatest implications will be in rain-fed agriculture, which currently provides around 60 per cent of the world’s agricultural production and covers 96 per cent of cultivated land in sub-Saharan Africa, 87 per cent in South America and 61 per cent in Asia (FAO, 2011), with

significant effects on economic growth and development (Brown et al., 2011). A large number of agricultural migrant wage workers who provide remittances to sustain families and their communities back home are concerned (ILO, 2016). Without large scale adaptation measures farmers practicing rain-fed agriculture in vulnerable regions would have no other choice than moving out. While current action and financial resources for adaptation fall short of the challenge, in the best-case scenarios, adaptation measures will need years to yield results.

It is estimated that by 2030 nearly half of the world's population will live in areas of high-water stress; water scarcity will force the displacement of hundreds of millions of people. Agriculture relying on run-off from glaciers, snow melt or rainfed is expected to be negatively affected by climate change. Areas suitable for growing crops will move geographically, but farmers who do not have the ability to move or adopt adjustment measures will be particularly affected. Adopting alternative or drought-resistant crops, may require decades of investment before yields become profitable (FAO 2011). An average temperature rise of over 4°C will pose serious risks for food security (IPCC, 2014b). Agriculture is an important contributor to both GHG emissions and transition to sustainability in agriculture will impact the work of many workers, families and communities.

Income, livelihoods and culture 370 million the world's indigenous and tribal peoples, depend on forests and biodiversity. Although, they account for only 5 per cent of the world's population, indigenous peoples care for and protect 22 per cent of the Earth's surface and 80 per cent of its biodiversity (ILO, 2017).

Heat stress, extreme weather events, and air pollution cause a reduction of labour productivity, an increased incidence of illness, and premature deaths. Such labour market consequences are projected to reach quite significant levels in the coming decades, with e.g. the lost working days from outdoor air pollution to rise to 3.8 billion by 2060 (OECD, 2016).

The percentage of stocks fished at unsustainable levels has increased since the 1970s, putting the livelihoods of many fishers at risk in the short or medium term, 31 per cent of fish stocks are overfished and 58 per cent are fully fished (FAO 2016). For the majority of collapsed fisheries, recovery is elusive, even after 15 years, leading to long-term economic losses (Hutchings, 2000). The livelihoods of some 45.6 million workers depend on fish capture and aquaculture and overexploitation of fish stocks could destroy 85.7 million direct and indirect jobs.

Jobs, businesses and livelihood are also vulnerable to the projected increase in environmental related disasters, whether slow-onset events (droughts, erosion, soil degradation or sea level rise) or rapid-onset events (extreme weather events, forest fires). It is estimated that between 2000 and 2015, 23 million working-life years were lost annually as a result of different environmentally related hazards caused or exacerbated by human activity. An annual average loss of, respectively, 536 and 376 working-life years per 100,000 people of working age between 2008 and 2015 (IPCC, 2014; McLeman, 2011; UNISDR, 2015).

As a result of climate change and other forms of environmental degradation, projections point towards an increase in the frequency and intensity of extreme weather events and disasters (IPCC, 2014).

Environmental degradation is likely to lead to major population displacement, internal and cross-border movements. It also increases the risk of conflict. For example, the displacement, food insecurity and resource depletion brought about by climate change have been associated

with the humanitarian crisis in the Lake Chad region (Nett and Rüttinger, 2016). Similarly, it is believed that the 2007–10 drought in the Syrian Arab Republic, which caused massive crop failures in the national agricultural heartland have contributed to the internal strife.

Environmental conservation and sustainability policies on the other hand can create additional and new job opportunities and maintain livelihoods.

Large scale adaptation measures, “just and timely transition” policies are essential to enable millions more people to overcome poverty, and deliver improved livelihoods. However, adaptation measures in the context of the Paris Agreement have not received the same level of policy attention, as mitigation and the financing mechanisms put in place fall short of achieving the intended ambition.

While in each of the examples above, environmental degradation negatively impacts jobs and livelihoods, and conservation improves these prospects in the medium to long term, the lack of immediate sources of livelihoods and social protection mechanisms for millions of people in case of loss of job and incomes, reveals the conflicting clashes between the sustainability and the jobs agenda. Tackling on a daily basis, the myriad of dilemmas for survival can in turn exacerbate environmental degradation.

Both climate change and environmental transition policies to low carbon economy exacerbate conflicts for access and distribution of resources amongst different population groups, - not only between the big business interest and the more vulnerable but amongst the latter. Tensions between different groups of workers and between job holders and job seekers can alter the support for and effectiveness of environmental transition policies, in such a manner that can prevent large coalitions of interests to support action for environmental transition. Instead support for policies or politicians that may offer illusive short-term solutions can prevail. These points are further developed hereunder.

Policies for environmental transition and for employment and decent work: *focus on conflicts and incompatibilities for building coherence and equity*

Environmental transition policies for achieving the targets set in the Paris Agreement and related SDG goals, will entail a radical change in the economic model, and thus the nexus of growth and jobs, embedded in SDG 8. Some observers have been rightly pointing out to the inherent contradiction or tensions amongst various targets of Goal 8. For example, SDG target 8.1, with its emphasis on strong economic growth performance, if pursued without regard for other targets under goal 8, would most likely drive increased carbon emissions. SDG target 8.4, on the other hand, calls for decoupling growth from environmental degradation, which would moderate if not neutralize emissions growth.

The emerging “Growth /de-Growth” debate has various dimensions: the use of GDP as metrics of progress and development and well-being; the quality of growth and patterns of growth discussion in relation to the its employment effects, for the quantity (full employment) and quality of jobs (decent work for all); and the concern with rising inequalities, insecurities and polarization including in labour markets, in the context of globalization.

Notwithstanding the inherent incoherencies of SDG targets, it is a fact that historically and presently the high standards of living were/are strongly associated with high levels of consumption of fossil fuel energy. Similarly, growth and jobs have been and are closely interlinked. Although in the last two decades the employment intensity of growth has been declining and the phenomenon of “jobless” growth or “job-poor” growth, widely observed and analyzed in different developmental contexts (ILO, 2014). Episodes of recession and low growth are associated with high levels of unemployment, underemployment and rising poverty. The unfolding fall out from COVID-19 and the ensuing recession expected, is having massive deleterious impact on jobs and labour markets. Sparring virtually no country or region in the world, the current crisis, as much as the 2008 crisis a decade ago, shows how interdependent the global economy is and the extent to which the nexus of growth and jobs are closely interlinked in particular in the downward spiral.

While addressing all aspects of the “Growth and De-Growth” debate is beyond the scope of this paper, the “decoupling” debate- should be mentioned. That is the feasibility of decoupling growth from fossil-fuel energy. For some conventional and non-conventional economists¹, it is possible to boost growth and jobs through renewable energy, green technologies. In this new growth narrative, there can be a delinking of CO₂ emissions from growth, although there are no historical precedents to sustain this affirmation and only anecdotal experimentation underway. Yet for others, there is an inherent contradiction between zero emission by 2050, while maintaining growth². For those advocating for a more radical paradigm shift, for environmental sustainability, it is not sufficient to transit to resource and energy efficiency as more growth- energy efficiency leads to more consumption. A more radical questioning of consumption patterns and lifestyles is needed.

Notwithstanding this broader debate about Growth with its various ramifications, in this paper we focus more squarely on the challenges that environmental transition policies, through carbon reduction measures, can imply for jobs and decent work.

The preceding section showed the multiple channels through which environmental degradation and the jobs and livelihoods in particular for those in poverty and those who face economic and job insecurity are interlinked.

Environmental transition policies to achieve the goal of the Paris Agreement, in turn affect jobs, positively and negatively. Broadly grouped into distinct but inter-related set of policies, **Mitigation** policies aim to reduce greenhouse gas (GHC) emissions, while **adaptation** policies aim at reducing the vulnerability to the effects of climate change. Both mitigation and adaptation policies for transition to low carbon or carbon neutral economy by 2050- induce significant structural change with multi-faceted implications for allocation of resources (including labour) and the distribution of costs and benefits.

Fully decarbonizing the economy will require not only completely transforming the global energy infrastructure, but also retrofitting all of the world’s buildings, remaking the planet’s agricultural practices, and revolutionizing transportation systems. The transition to a low-carbon and resource-efficient economy involves changing methods of production across several sectors.(IPCC, 2014). As shown in Chapter 1, these are the sectors that account for a high share of GHG emissions, use a high level of resources and, in the case of agriculture,

¹ For example, Thomas Friedmann (2008) and/or the New Climate Economy (various reports).

² (Victor-Jackson, various publications.

employ large numbers of people. The required measures would change these industries, as well as the industries that supply their inputs and depend on their outputs in a radical way and across borders. Induced changes in the level and composition of labour demand will have far reaching impact on the economy and society, although these effects are likely to be heterogeneous across regions, sectors and groups of workers and job seekers.

Structural change historically driven by technology and investment entails a substantial dynamic of job creation and job destruction or as economists qualify as “creative job destruction”, and a shift in income structures. The overall net outcome which can spread over generations and across geographies, can not be exactly anticipated. In the case of environmental transition which virtually affects all sectors of the economy across the planet, as well as production and consumption patterns, the scale of change and in particular its pace, if the promises of the Paris agreement are withheld within the limited time horizon of 2050, is likely to cause major displacement effects. Economic, social and political implications are harder to anticipate.

In spite of these complexities, in the recent past, there has been useful attempts to quantify the impact of environmental transition or greening policies, in particular mitigation policies, on jobs through various modeling exercises (ILO 2018, OECD 2016). These estimates forecast a net positive impact, meaning that the net job creation potential of green policies will exceed the jobs and livelihood losses in other sectors. According to the ILO, the net positive impact can be at about 18 million jobs by 2030. This overall positive employment impact will be induced from the action taken in the energy, transport and construction sectors, if countries were to implement their nationally determined goals (NDCs) under the Paris Agreement, to limit global warming to 2°C over the course of the century. Employment creation is driven by the higher demand for labour in the renewable energy sources in comparison with electricity produced from fossil fuel sources, and the employment demand of the entire value chain associated with renewable energy and electric vehicles and construction. While the OECD is more cautious in terms of gains, it still points to positive outcomes that would surpass the losses. Both reports have caveats in terms *if the right policies were to put in place*. We will turn to this point later.

Aside from methodological issues and assumptions underlying the various modelling exercises, these studies understate or underestimate several important outcomes:

- Pointing to the net positive outcomes at an aggregate level – in the most optimistic scenario of 18 million additional jobs- may be considered **too modest** in view of the present and projected **global deficits in decent work**. The various indicators characterize year after year the extent of global decent job deficits: the lingering global unemployment levels of over 170 million, the over 40 million or more new entrants to the labour market each year, the high levels of youth unemployment, working poverty and informality, rise in job insecurity, historic decline in labour share of income, and many others. These figures of course do not take into account, the massive impact of COVID-19 on jobs and livelihoods, briefly discussed at the end of this paper.

- These aggregate effects tend to overlook **significant regional and sectoral dislocations**, particularly during the transition period, that are likely to cause significant harm to workers and communities, in particular in the absence of adequate social protection systems and alternative opportunities offered. It should be recalled that 4 billion people have no access to

adequate social protection³. There are few examples of successful industrial restructuring, with social impact embedded. In the context of the environmental transition policies, recent social packages are even fewer and limited in outreach and impact.

- **the duration of jobs** is another important issue not adequately addressed in studies that focus on aggregate estimates, for example temporary job creation in wind farm construction jobs will not compensate for permanent job losses in mining sectors. Existing studies tend to combine temporary and permanent employment into one aggregate job creation number. The rise in temporary, part time jobs with insecure tenure time horizon is already a significant feature of the global decent jobs deficits.

- **the quality of jobs**: the aggregate positive net quantitative outcome does not necessarily account for the quality of new jobs created. “Green jobs” are not necessarily decent jobs. The current state of quality deficit in jobs, globally or in specific national contexts, whether measured in terms of wages, conditions of work, working poverty and job insecurity, informality, is of concern. Unless the drivers that are resulting in low quality jobs are not addressed, the environmental transition policies are not necessarily going to lead to better jobs. The quality of jobs dimension is particularly, for the 62 percent of the world’s workforce works that is informal. The informal economy, encompassing a large proportion of the 1.2 billion people who- as mentioned above- are directly concerned with ecosystem services , in agriculture, fishing, or urban informal sector including waste collection and recycling.

Similarly, the quantitative modeling does not address issues with vertical and horizontal inequalities. Vertical with redistributive impact. Regarding horizontal inequalities, for example gender equality, without a clear recognition of and efforts to narrow the gender gap in labour markets, there is a high risk that the transition to a green economy will only perpetuate the current trends of occupational segregation, unequal and low pay.

- **Intersectoral effects**: All sectors are likely to be impacted by structural change and most studies do not account for inter-sectoral knock-on effects. For example, in agriculture, organic farming tends to require more workers than conventional farming practices. Higher labour intensity however can increase production costs, and therefore the final price for consumers. An increase in organic farming will likely lower the demand for fertilizer, and jobs that might be lost in the fertilizer industry, and so on.

Furthermore, studies focusing on the sectors most directly concerned, e.g. fossil fuel (coal, oil and natural gaz) and extractive sectors, emphasis is laid on the relatively few workers engaged compared to their economic output (OECD 2012, ILO, 2012). For example, it is highlighted that the ten most carbon-intensive industries in the EU-25 account for almost 90% of all CO2 emissions, but for only 14% of total employment (OECD, 2012). These studies suggest therefore that the job losses from reducing economic activity in extractive and fossil fuel will be modest in these industries and these will be largely compensated with jobs created in the green energy sector.

Most analysis on divestments in the fossil fuel sector, in particular oil and gaz are North centric. They do not account for the South perspective, in particular the broader developmental role that oil and gaz industries and exports represent for example, for oil exporting developing countries and for their re-positioning in the division of power in the global economy. Until

³ ILO, [World Social Protection Report 2017/19](#), 2019.

today, fossil fuel, in particular oil and gaz, provide the bulk of State revenues and welfare systems in oil and gaz exporting countries in the Middle East and North Africa. A sharp decline in these revenues will have major economic and political fallouts, and restrain the ability of the State to invest on development and on social welfare. So a narrow focus on the number of workers in these sectors, does not fully account for broader economic, social and political implications. Some of these countries happen to have the highest number of unemployed youth including educated youth. Social and political unrests with demands for decent jobs and social protection have been recurrent in the region.

What is at stake is not only powerful corporations' greed and rent seeking in the fossil fuel sectors, but also the knock-on effects on the state revenues for a number of countries with a less diversified economy and hence on their ability to invest and spend on transition policies.

Essentially, the question of whether the loss of jobs will be offset by gains in emerging sectors is not simply a mathematical equation. Those who stand to lose their jobs will not necessarily have the necessary access and capabilities to seize new employment opportunities. Nor without adequate compensation mechanisms will be able to have a decent living and retirement. The real issue to address is the distributional implications, across and within countries of the transition to a low-carbon.

Thus, employment and social effects of environmental policies should be considered within a more comprehensive economic and societal cost-benefit analysis is needed. This is essential not only for establishing a sound analytical perspective but in order to increase the political buy-in for environmental transition and avoid clashes between the sustainability and social objectives. These are further elaborated in the following discussion on “Just Transition” policies.

Moreover, policy instruments both for environmental transition and for the promotion of full employment and decent work, cut across macro-economic policies including investment, trade and fiscal policy, sectoral strategies, enterprise and labour market policies, regulatory frameworks, universal social protection schemes and targeted compensatory mechanisms. In each of these policy areas, there are points of coherence and convergence in the pursuit of low carbon economy goals and decent work, as well as potential conflicts and incoherencies that may entail the “green” and “social” objectives to clash.

There are also continuous debate and opposing views on the effectiveness of market-based solutions and incentives versus public policies and investment, regulatory frameworks, taxation policies and mixed solution of public-private partnerships for environmental transitions. Historically there are few examples of “socially” successful transition policies through market driven approaches and it is clear that the role of the State and political leadership will be crucial in launching large scale New Deal efforts, for example.

Incremental approaches to environmental transition through use of single or selected policy instruments such as regulatory frameworks or taxation and incentives structures, technological innovations, have been a tremendous learning ground for policy innovation and implementation. However, there are two major problems. Incremental policies do not respond to the time horizon of carbon neutral economy by 2050 on a global scale, and they do not factor in, the necessary compensation mechanisms for negative impact. The example of the carbon tax in France and the Yellow-West (Gilets Jaunes) protests in France, is a case in point. The result may be a regression or at best stagnation at both fronts.

Integrated strategies on the other hand, have a better chance of creating the desired coherence of objectives and a fairer level playing field. However, they face the challenge of institutional coherence, coordination and cooperation in planning and implementation.

In general evidence is severely lacking on the policy instruments that work best in making the green growth transition as beneficial as possible in terms of jobs and livelihoods. New and more analysis is needed on the impact of policy instruments, for example how fiscal initiatives including fiscal stimuli measures can best be designed to combine the goals of Paris Agreement, SDG8 and SDG 13, environmental, economic and labour objectives.

Establishing, the coherence between jobs and environments is easier to achieve for the advocates of radical paradigm shift, at least conceptually. In this narrative, it is the globalization and the neo-liberal model sustaining the global economic strategies since the mid-1970's that have not delivered on either objective of sustainability or decent jobs. At a higher level of systemic change, therefore, a radical paradigm shift away from the neo liberal policies, could conceptually better reconcile the twin objectives of decent jobs and low or no carbon economy.

The various Green New Deal proposals that are on the table, whether implying all the same level of paradigm change, typically aim at reconciling the two agendas: “We have a right to good Jobs and livable Future”

Proponents of the Green New Deal or “Big Push toward a Zero-Carbon Economy” argue that the climate change “negative externality” can be more effectively eliminated with a global carbon tax, appropriate regulation, aggressive strategies in adaptation and by policies that strengthen social protection systems to correct any negative distributive consequences of emissions reduction (Grubb, Hurcade and Neuhoff, 2014, Herman, 2015, Pollin et al., 2014, Mazuccato, 2013; Mazuccato and Perez, 2014).

Transition Policies: the concepts of justice and time

The twin objectives of environmental sustainability and decent work for all, have been driven by deep philosophical considerations and values: for the first the Human being messing up with Nature, and for the second, the function and future of Human Work. For both objectives, “Leaving no one behind” can only be founded on the values of **justice- environmental justice, social justice and “just transitions”**-. This section firstly, explores how these notions of “justice” have permeated policy frameworks and debates and how they can shape policy responses. Secondly the notion of “time”, “future” and the competing “urgencies” and their implication for policies are explored.

The Notion of Justice

There are various layers to understanding **environmental justice**. A first line of concern is that those who are least responsible for climate change suffer gravest consequences.

This can be in turn analyzed at two levels amongst countries, essentially advanced and developing, and within countries:

1) **Climate justice amongst countries** recognizes that the historical responsibility for the vast majority of greenhouse gas emissions lies with the industrialized countries of the Global North. Even though the primary responsibility of the North to reduce emissions has been recognized in the UN Climate Convention, the production and consumption habits of industrialized countries continue to threaten the survival of humanity and biodiversity globally. It is imperative that the North urgently shifts to a low carbon economy. Therefore, much of the developing countries (G77) negotiations' position has been for the North to accept to undertake the heavier lifting for environmental transition. At the same time, it recognizes the developing countries "Right to development". Without resorting to the carbon intensive model of industrialization, countries of the Global South are entitled to resources and technology transfers. The Paris Agreement recognizes this notion of environmental justice through the term "**common but differentiated responsibilities**" in its preamble, which has overarching implications for other provisions in the Agreement. It is largely admitted that among developing and emerging economies, the Least Developed Countries (LDCs) and Small Island Developing States (SIDS) have the higher vulnerability and lower adaptive capacity.

2) **Within countries**, the most vulnerable groups of population and workers are affected by the environmental degradation as described in the previous section and are likely to pay for the cost of transitions if appropriate policies to cushion these transitions are not set in place. The high vulnerability to the impacts of climate change generally results from the lack of adaptive capacities, limited alternative income opportunities, the absence of social protection systems and high dependency on climate sensitive resources such as local water and food supplies.

From the perspective of in-country inequalities, population groups whose jobs and livelihoods are particularly vulnerable to environmental degradation as well as to environmental transition policies are diverse and multiple. The impacts are likely to be consequential, in particular, for:

- The working poor, those working in the informal economy, seasonal and casual workers, the self-employed, micro and small sized enterprises, internal and cross-border migrants.
- Women are also likely to be more affected than men because of existing gender inequalities.
- Sectors most dependent on natural resources and climate such as energy, water, agriculture and food production, tourism, transport, public services and industries dependent on fossil fuel.
- Much of the policy debate has also focused on corporate accountability for environmental degradation and the economic and social rights of marginalized communities of Indigenous peoples.

Social Justice, with more than a century long history, may not need definition. It is embedded in the International Covenant on Economic, Social and Cultural Rights, and the body of international labour law and standards edited by the ILO and ratified by countries. In the present context of rising inequalities and socio-economic insecurity, wage share stagnation and decline, it embeds various layers of vertical and horizontal inequalities that are reflected in the labour market, in access to jobs, social protection, voice and social dialogue.

Few analyses and policies have focused on the heterogeneity and diversity of interests within vulnerable groups, for example amongst different groups of workers in the same geographic area, between pastoralists and farmers, between migrant workers and host communities. The competition for scarce resources because of environmental degradation and the clash of

interests often regenerate social conflicts are likely to polarize further the affected communities. In some instance they may eventually lead to violent conflict.

Integrating the principles of the Environmental Justice with that of Social Justice, would entail that the desirability of each policy decision and instrument is weighed against the distributional impacts.

The time factor

The time factor is fundamental in assessing the compatibility or otherwise of achieving the goals of environmental transition as set in the Paris Climate agreement and the necessity of just transition, at the intersection of environmental and social justice. It plays at several levels:

- The first timeline is the 12 years horizons to act to half the emission , in order to reach the goal net zero emission by 2050 as reminded by the 2018 IPCC's report. A tall order, as many countries are already off track of reaching their Nationally Determined Contributions (NDC) under the Paris Agreement.
- The second timeline is the everyday's urgency of jobs and livelihoods, that can not be postponed, if no immediate alternatives are proposed. The chronic slowdown in growth since the 2008 financial crisis and the global job deficits, the inequalities and socio-economic insecurities that are affecting millions in countries across the development spectrum, reviewed earlier, do not provide an encouraging environment for fast transitions.
- The third timeline is the pace of technological innovation for the clean energy and other sectors and their adoption on a global scale. As outlined in the latest 2020 report of the International Energy Agency, wind turbines, solar panels and electric vehicles are spreading far more quickly around the world than many experts had predicted. But this rapid growth in clean energy isn't yet fast enough to slash humanity's greenhouse gas emissions and satisfy global demand. The availability of technology does not automatically lead to its adoption on a large scale. There are issues of finance for the large scale investments required but equally important the thorny question of international property rights (IPRs) and technology transfer, also part of the concept of environmental justice. The provisions on these issues in the Paris Agreement have given way to some of the harshest negotiations. It should also be born in mind that other technological developments, often labelled as Industry 4.0, such as digitalization, robotics and artificial intelligence are concomitantly affecting the economy and the labour market. Discussions and policy debates on Future of Work are pointing out to additional concerns with respect to job displacement and job insecurity and lower social protections that accompany these new technological developments.
- Many policy decisions for environment and for employment, are pronounced and taken under the pressure of electoral time cycles and dynamics, not in tune with long term strategies. In developing countries, the issues of growth and jobs is often acquiring a more immediate urgency. Seldom, the interconnections between these twin objectives of environment and of jobs are the subject of public policy debates.
- The time lag for policies taken to fully deploy their effects is another consideration. For example, all policy proposals to tackle both the environmental transition impact together with pursuit of full employment and decent work, converge on the importance of the reform of skills and education preparing for new skills needed in the low-carbon economy. However, most educational and training reforms take 10

to 15 years, often a generation to fully deploy their effect. Therefore, a delayed solution for an urgent need.

- Finally, a radical shift and restructuring of this nature requires global collective action and leadership. The current isolationist drives in international cooperation and the retreat of multilateralism are occurring at a time when some of the boldest decisions are required with respect to climate change as well as for a new social contract.

How these conflicting urgencies and time constraints can be addressed with equitable outcomes is the most challenging issue. The evolving concept of “Just transition” is an attempt to connect these considerations.

Just Transitions: concept, principles and reality

“Just transition” implies the recognition of the significant redistributive impacts that both environmental degradation as well as environmental transition action have and the need for compensatory policies and programmes to bring out a more equitable outcome.

The concept has been gaining ground and momentum in international policy frameworks and discussions on climate change, in particular in response to opposition and concerns by workers and communities most directly affected by mitigation policies. The concept of “just transition” is embedded in the Paris Agreement in 2015: “Taking into account the imperatives of a Just Transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.”⁴

The International Labour Organization (ILO) which held a first international tripartite (governments, employers and workers) discussion on the subject of environmental transition and world of work at the International Labour Conference in 2013, adopted in 2015 ,the *Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All*. The non-binding *Guidelines for a Just Transition* (2015), is the outcome of an international meeting of experts representing tripartite (governments, employers and workers)held at the ILO.

The International Trade Union Congress (ITUC 2017) has issued a report on the topic and invited for dialogue on Just Transition Policies.

While these frameworks are not of equal normative value and there is no agreed definition of “just transition”, significant common understanding has been emerging on a set of principles, processes and types of policy actions for implementing just transition policies. Here are highlights of principal themes⁵:

⁴ Just Transition features in the preamble of the Paris Agreement, it has been further developed in subsequent meetings of Conference Of Parties, in particular at COP21 ,the “Just Transition of the workforce, and the creation of decent work and quality jobs”, is adopted as a key area within the work programme. The Working Group on Just Transition and Decent Work is part of the Marrakech Partnership Global Climate Action, which has the mandate to share good practice and case studies of the real world implementation of the Paris Agreement. This ambition is reaffirmed and strengthened within the “Solidarity and Just Transition Silesia Declaration”, an initiative of the Polish COP Presidency adopted by governments at the COP24.

- **Proactive identification, anticipation, mapping and planning:** of communities and groups of populations that are likely to be affected by transitions and where strong transitional policies are required to redress inequitable outcomes. This process should engage the participation of those communities, representative institutions and involve multi-stakeholder consultation;
- **Participatory inclusive dialogue including social dialogue** at all stages of needs assessments and in search for solutions, short and long term;
- **Respect for human rights,** Right to Development, and for fundamental principles and rights at work;
- **Social protections:** universal social protection schemes should take into account the scale of redeployment induced by climate action. However since the limited coverage of workers around the world referred to above, special social protection schemes need to be put in place to ensure social equity for affected communities. These can include pensions and retirement packages, income support, public employment programmes, training and retraining schemes.
- **Financing for just transition:** in the funding mechanisms to support environmental action and the various approaches for financing climate action, priority should be given to impact on work and livelihoods and the creation of alternative opportunities.
- **Comprehensive and coherent policy action** across macroeconomic, sectoral, and enterprise policies; rights and occupational safety and health; social protection; skills development; active labor market policies; and social dialogue and tripartism, to be adapted to specific contexts.

While these principles signal significant progress in joining environmental transition and social justice, the concrete and practical examples of policy action and successful transition programmes, are few and limited in scope. Few national policies including within the NDCs strategies under the Paris agreement have incorporated policy schemes enacting the just transition processes.

In general, there remains significant incoherence between various national policies and strategies in a given country, across environmental, growth and employment policies. Similarly there is a gap between environmental regulatory frameworks, investment strategies in the renewable energy and the skills development policies. There are the issues of institutional segmentation and competing and conflicting mandates.

Even when the political and policy intent is there, managing the political economy of transitions is not guaranteed. There are real complexities in identifying affected communities in a context of such a large scale transition and structural change. Even in cases of sector specific action with a geographic focus, such as the transition from coal industry, legitimate questions arise as to who should be targeted: just the workers at a particular plant? Those in the wider supply chain? Those indirectly affected in the communities, teachers, retailers?

Should the investments in training, and reskilling prioritize youth and the next generation or present generation of workers? Often though, transition policies do not work in the short run for workers displaced from an industry or sector but rather for the next generation, in particular policies that emphasize skills anticipation and development in the green economy.

There are various tensions and conflicts of interest need to be acknowledged and managed. The tension between rapid and bold policy action while ensuring inclusive and time consuming

dialogue and governance processes, often referred to the ‘sustainability- inclusivity’ tension. The inter-generational tensions and the diversity of interests within the vulnerable and affected groups of population and communities have already been mentioned.

Stakeholders and political mobilization for environment and for jobs agenda:

There is growing understanding that Paris Climate Agreement goals can only be achieved through a strong and proactive role of the Government, and more generally the public sphere. At the same time, there continues to be debate and opposing views on the scope and effectiveness of market-based solutions and incentives viz the role of the State for setting in pace regulatory frameworks, public policies and investment. Financing of environmental transition policies and agreement on taxation approaches are far from settled and the coordination of market driven approaches with public policies and mixed solution of public-private partnerships in constant evolution.

Similar policy debates have taken place since mid-1970’s with respect to policies for promoting employment with the adoption of deregulation policies and de-facto abandonment of the objective of full employment as a target of macro-economic policies.

Businesses and investors, are major actors in the success or otherwise of environmental transition . Big corporations which often account for a significant portion of GHG emissions are often seen as strong lobbies resisting or slowing down the transitions. In spite of voluntary sustainability initiatives and self-determined emissions reduction targets taken by numerous businesses, the lack of consumer and investor interest in sustainability performance, at both sides of the production chain, is often invoked as major obstacles (Unruh et al., 2016). But increasingly, climate risk is being perceived by some of the largest investors as investment risk and investment in renewable energy as profit making.

There is relatively little focus and research on micro-, small and medium-sized enterprises, which constitute over 90 percent of businesses, employ the millions of workers face specific challenges in adapting to environmental transition and they dispose of fewer resources and incentives to enact on transitions.

Political and social mobilization for the two green and social agendas have often acted in distinct and dispersed manners. There are various reasons underlying the disconnect between civil society actors , climate activism , trade union actions and other social protest movements such as the Gilet Jaunes (Yellow-West). The perception of opposing interests in the short and long term, as well as distinct history and institutions of climate action and social protest agendas are dividing the ranks and delaying action.

There are a number of rallying elements though that would call for the alliance of “ the dig and the gig economy”⁶ in support of the just transition agenda and for a renewed social contract. Advocates of the sustainability increasingly emphasize the importance of adding social justice, while social justice advocates increasingly incorporate the ideas of sustainability into their own agendas. The ITUC’s initiative (above-mentioned report and site) offering possible approaches to bridge the trade-offs with the employment and workers’ agenda in the environmental transition process is a step in joining the agendas.

⁶ Term used by Naomi Klein, On Fire, 2019.

Finally, an interesting phenomenon, yet to be fully analyzed, is the global mobilization of children and youth at the forefront of environment advocacy. While some question the capability of the human nature to empathize with the longer term and future generations- youth seem to perceive the sense of emergency more than adults.

COVID-19 impact on jobs and on environment: fungibility of crises?

As this paper is written, there is lot of uncertainty in outcomes related to COVID-19 pandemic and therefore we can but speculate on whether it may act as an “accelerator” or a “break” for the twin agendas of environment and of jobs. The overwhelming impact, the pandemic and the measures to curb its progress, have had so far on jobs and livelihoods on the one hand, and on GHG emissions on the other, justifies this post-script addition to the paper. The pandemic is revealing, in most dramatic ways, the contrasting directions, the sustainability and the social justice agendas can take as a result of such a global shock.

The COVID-19 pandemic and the actions to respond have laid bare the extent of inequalities both to the health hazard as well as to the impact of actions taken to protect and recover. The uncertainty surrounding public health, the economy and hence energy consumption over the rest of 2020 is unprecedented, bringing into a new light the preceding discussions on the notion of conflicting urgencies. The impact of lockdowns, travel and trade restrictions on jobs, livelihoods and incomes are massive and yet to be fully accounted for. The ILO estimates are revised upward regularly. At the last count, it amounted to the equivalent of more than 305 hundred millions full time jobs lost. The worst recession in this century and rise in poverty are predicted by major economic and financial analysts.

On the other hand, clean air in the most polluted cities, the collapse of demand for fossil fuels and GHG emissions, in the way nobody could imagine, provided a glimpse into how the future might look like if the environmental transition policies were successful! The results over the past few weeks and months obviously can not be projected into the even near future.

Nevertheless, the most recent IAEA report (2020) has estimated the energy impacts based on a scenario of a widespread global recession caused by months-long restrictions on mobility and social and economic activity. Within this scenario, the recovery from the depths of the lockdown recession will be only gradual and accompanied by a substantial permanent loss in economic activity, despite macroeconomic policy efforts. The result of such a scenario is that energy demand contracts by 6%, the largest in 70 years in percentage terms and the largest ever in absolute terms. The impact of COVID-19 on energy demand in 2020 would be more than seven times larger than the impact of the 2008 financial crisis on global energy demand and low-carbon sources would far outstrip coal-fired generation globally, extending the lead established in 2019.

Global CO₂ emissions are expected to decline by 8%. Such a year-on-year reduction would be the largest ever, six times larger than the previous record reduction– caused by the global financial crisis – and twice as large as the combined total of all previous reductions since the end of World War II. As after previous crises, however, the rebound in emissions may be larger than the decline, unless the wave of investment to restart the economy is dedicated to cleaner

and more resilient energy infrastructure. The historically low oil prices, may act however in the opposite direction, as a dis-incentive to continue the shift to renewable energy sources.

These contrasting impacts on jobs and on environment, of what has been labeled, the one in a century crisis, may be paralleled by opposing directions that the recovery might take for jobs and for environment. While tackling the immense economic and human hardship caused by recession, policy makers may give priority to any job better than no job, and relieving businesses from additional regulatory constraints, in actual fact stimulating high fossil fuel consumption sectors. In the past, including in response to the 2008 global economic and financial crisis, support for greening policies has lowered during recessions and throughout the austerity measures that were imposed in the wake of stimuli packages.

Other scenarios are also possible with policy makers devoting a greater part of the stimulus to be invested on renewables, and that the support packages to industries include some level of conditionality linked to green policies. A global effort to leverage stimulus spending to catalyze climate ambition would be a win-win and a one-time opportunity for a forward leap. In this regard, there have been several policy pronouncements including by the EU. It is of course too early to assess their implementation.

More importantly, the COVID-19 crisis has underscored the vital need for stronger social protection, affordable access to education, health care, unemployment benefits and basic income. It has also shed a new light on the vulnerabilities of informal workers and businesses, or the retail and delivery workers with an ambiguous employment status, refocusing the policy debate on the need for a new social contract. It has also revealed the critical role of the care economy workers and services and the need for bold measures to enhance the investment and status in this sector. It can be hoped that measures adopted now, which are all elements of the “just transition agendas”, are likely to have a long-term effect on policy agendas serving both objectives of employment and environment.

Conclusion

While recent policy supports tend to depict win-win outcomes and scenarios integrating the growth, full employment, decent work goals of the 2030 SDGs and the Paris Agreement, we argue that a more detailed policy and research focus is need.

The assumptions made in modeling exercises and in particular the condition, “if the right policies are put in place” seldom materialize in the real world of policy making. While the positive synergies are reasonably well articulated at an aggregate level and in the medium to long term, the proposed policy approaches insufficiently acknowledge short-term losses and tensions. Unlocking, revealing and acknowledging the tensions is the most effective way in addressing them within a transparent and inclusive “just transition” agenda.

While the two agendas and policy frameworks sustaining them have been connecting gradually through “just transition” principles, there is little on the table by way of well thought-out transition policies and processes with actual outcomes for specific sectors, and geographies and socio- economic groups that are to lose in the short term.

Recognizing the differences in the two agendas is the best way of connecting the stakeholders supporting both through innovative social engineering .

Additional research and policy focus on these issues is necessary if support, trust and progress is to be expected on the two fronts of SDG 8 and SDG 13.

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