Beyond Growth: Assessing Economic Degrowth for Socio-environmental Justice

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By

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Declaration

I hereby declare that the work embodied in this dissertation entitled **"Beyond Growth: Assessing Economic degrowth for Socio-environmental Justice"** is carried out by me under the supervision of **Dr. Prajna Paramita Mishra,** School of Economics, University of Hyderabad and is original.

The dissertation or a part there of has not been submitted for any other degree at this University or at any other Universities.

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Certificate

This is to certify that Mr. Roshan Padhan has carried out the research embodied in the present dissertation entitled **"Beyond Growth: Assessing Economic degrowth for Socio-environmental Justice"** for the degree of Master of Philosophy in Economics, under my supervision. I declare that to the best of my knowledge that no part of the dissertation is earlier submitted for the award of any research degree in part or full at any university.

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Contents

Acronyms and Abbreviations

AFS	Agri-food System
CCSs	Credit and Services Cooperatives
CPAs	Cooperatives of Agricultural Production
GDP	Gross Domestic Product
MuSIASEM	Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism
UBPC	Basic Unities of Agricultural Production
SMCE	Social Multi-criteria Evaluation

Chapter 1

Introduction

1.1: Introduction

The debate on the alternatives to the growth economy is very old. In the context of the global economic crisis (slowdown), once again the debate has taken the center stage. This crisis is not isolated in nature; rather it is linked with the ecological crisis at different level and the social conflicts seen in different parts of the world (Bonaiuti et al. 2012). The ecological crisis, which we are facing today, is not completely a new phenomenon (Garcia et al. 2012). What is new for us is the scale of the crisis which is global in nature and the speed which is unprecedented (ibid.).

The challenges of sustainability which we are facing today, cannot be solved by some 'technical fixes' rather a 'fundamental reorientation of the society and economy is imperative (Haberl et al. 2011). Hence most of the ecological economists are arguing that the solution offered by growth policies is not sustainable rather it is the root of the crisis. Alexander (2012) therefore argues for a new vision and a macroeconomics beyond growth. The basic idea behind this argument is that, when the economy uses resources beyond the capacity of the earth to regenerate resources and assimilate the waste, further growth become uneconomic, as the social and ecological costs of growth becomes greater than the benefits (Alexander et al. 2012).

In this line a project called 'Degrowth' was initiated in the beginning of 21st century for shrinking production and consumption voluntarily to achieve social and ecological sustainability (Demaria et al. 2013). Degrowth is considered inevitable by its proponents and hence they call for a "prosperous way down" (Odum and Odum et al. 2006), or a soft lending, instead of a crash, by adopting degrowth strategies. For example, Martinez-Alier (2009) sees "crisis as an opportunity" for the rich countries to restructure their social and financial institutions and to put their economy in a trajectory of more sustainable use of natural resources.

1.2: Short History

Various ideas similar to degrowth have been part of the philosophical debate for centuries. For example, Malthus (1789) believed that, there may be physical limit to growth in terms of agricultural output. But the question of ecology never became a central issue in economics or in policy making up to 1970s (Latouche et al. 2009).

In the beginning of the 1970s the world economy was in a depression, the monetary system was suffering and the new environmental movement was gaining momentum (Colombo et al. 2001). At this time in 1972, The Limits to Growth book was published by the Club of Rome. This book questioned the exponential growth of population and capital and concluded that this will lead to an eventual collapse. The authors of this book argued for a steady state equilibrium with zero rate of growth as a solution to escape the collapse. This report faced several criticisms both from the standard and Marxist economists (ibid.).

The debate on environment versus growth took a completely different turn with the publication of the 'Report of the World Commission on Environment and Development: Our Common Future'[1] in 1987 by the United Nations Commission on Environment and Development. This report envisioned the possibility of a new era of economic growth with sustainable use of natural resources. The idea of 'Sustainable Development' developed in this report does not say about absolute limits. Rather it believes that the present limits are just the result of the existing state of technology and social organization for use of natural resources and the ability of the biosphere to absorb the waste generated. Hence, the report suggested that the state of technology and social organization can be improved to foster growth.

In between the publication of the 'Limits to Growth' report (1972) and the report 'Our Common Future' (1987) different French publications[2] for the first time used the word "Decroissance" (French for Degrowth). It was Nicolash Georgescu-Roegen (1975) who challenged the

[1] This report is popularly known by the name of the Chairman of the United Nations Commission on Environment and Development, Gro Harlem Brundtland as the 'Brundtland Report'.
[2] Amar, 1976; Gorz, 1977; Georgescu-Roegen, 1979, http://www.degrowth.org/short-history

'mechanistic epistemology'[3] of Neoclassical economics[4]. He questioned the self-sustaining circular process of economic system and argued that, as continuous exchange takes place between the economic system and the environment; both affect each other in a significant way.

Nicolas Georgescu-Roegen is considered as the father of degrowth economics. The theoretical foundation of degrowth economics is based on the publications[5] of Nicolas Georgescu-Roegen in the year 1971 and 1977. He introduced the implication of thermodynamics to the economic process by showing the difference between mechanics and thermodynamics. The concept of available and unavailable energy[6] developed by French engineer Nicolas Sadi Carnot and the second law of thermodynamics[7] were used by Georgescu-Roegen to challenge the complete reversibility assumption of neoclassical economics based on mechanics. In the words of Georgescu-Roegen (1975), "Entropy Law[8] is the taproot of economic scarcity".

The debate on 'degrowth' remained confined to closed academic circles up to 2004 when 'degrowth' entered the public debate in France with the publication of a monthly magazine on 'degrowth'. In Spain degrowth discourse started in 2006 and gained momentum in 2008 when the Network for Degrowth was created for the development of degrowth discourse and practices (ibid.). Network for Degrowth was also created in Italy in 2004 and bio-economist like Mauro Bonaiuti and sociologist Marco Deriu stared research on degrowth (ibid.) Movement for happy degrowth, led by Maurizio Pallante became very popular in promoting degrowth practices due to its simple discourse (ibid.).

The English term 'Degrowth' officially first came to use in the academic research in 2008 in the First International Conference on Economic Degrowth for Ecological Sustainability and Social Equity, in Paris (www.degrowth.org). The participants of this conference made a declaration that

[3] In line with the mechanistic epistemology the neoclassical economics viewed the economic process as a mechanical analogue consisting- as all mechanical analogue do- of a principle of conservation (transformation) and a maximization rule (Georgescu-Roegen et al. 1975)

[4] Nicolash Georgescu-Roegen's critics of Neoclassical economics include both the first half of the nineteenth century and the later period.

[5] The theoretical foundation of degrowth economics is based on Georgescu-Roegen's papers on, The Entropy Law and Economic Process, Harvard University Press, Cambridge, MA, 1971 and The Steady-State and Ecological Salvation: A thermodynamic analysis, BioScience 27 (4) (1977) 266-71.

[6] Available energy is the energy which can be transformed in to work and unavailable energy is which cannot be transformed in to work.

[7] In the words of Georgescu-Roegen, the second law of thermodynamics says that, "All kinds of energy are gradually transformed into heat and heat becomes so dissipated in the end that man can no longer use it".

[8] Entropy Law suggests that even the material universe is subject to an irreversible qualitative change.

'global economy has grown beyond ecologically sustainable limit', particularly the wealthiest countries of global North. Economic growth though accompanied by increase in ecological efficiency of production and consumption has failed to reduce the natural resource extraction and pollution emission.

Further the increasing inequality between global North and South due to the unequal exchange in trade and finance is leading to a reduction in the environmental space available to the poor countries. The resulting environmental burden is also shifting to the poor nations. In this context the declaration of the Paris Conference (2008) says that any delay in reducing the scale of economic activities with regard to the capacity of the eco system and redistribution of wealth both between countries and within the countries is not feasible. In case if we failed to implement the above policy then the resulting involuntary and uncontrolled decline or collapse may lead to devastating social impacts.

In the aftermath of 2008-09 global economic crisis, in 2010 the Second International Conference on Economic De-Growth for Ecological Sustainability and Social Equity was held in Barcelona. In this conference academics, activists and practitioners discussed new ideas and policies which are absent in the dominant sustainable development discourse. The main point of the declaration of this conference was that the "debt-fuelled growth" as a solution to global economic slowdown is not sustainable in nature and it will increase the ecological and economic debt on future generation and especially the poor people.

The 3rd International Conference on Degrowth for Ecological Sustainability and Social Equity took place in Venice in 2012. In the same year another international conference took place in Montreal. The objective of this conference was to challenge the sustainable development discourse and move to a degrowth perspective. Discussions in Montreal were limited to the issues of America, but it made the concept of degrowth more acceptable in the academic circle.

The Fourth International Conference on Degrowth for Ecological Sustainability and Social Equity took place in Leipzig (Germany) in 2014. Participants of this conference rejected varieties of degrowth which do not strive for securing a good life for everyone. This conference was the result of the acceptance of degrowth in German-speaking countries.

1.3: Definition

Degrowth has been used not only by academics but also by activists working for environmental sustainability and social justice across the world. Hence, there exists different definition and interpretation of degrowth.

In the context of the multidimensional crisis the Paris conference (2008) suggested for a paradigm shift from the unlimited economic growth to a concept of 'right sizing of the global and national economies'. For the industrialized countries of global North where the per capita ecological footprint[9] is greater than a sustainable level 'right-sizing' means a reduction in production and consumption to remain within the sustainable limit. But for the countries of global South where many people are still living below poverty line 'right-sizing' means increasing their standard of living by increasing production and consumption by locally suitable means not by developmental policies imposed by any external force.

The declarations of Paris conference defines "degrowth" as the process by which the paradigm shift can happen through 'right-sizing' in the wealthy countries, or the world as a whole. It says degrowth is a process of "voluntary transition towards a just, participatory and ecologically sustainable society".

The paradigm shift or the degrowth society implies "a society in which humans live within their ecological limits with open connected and localized economies"[10]. For fulfilling the basic human needs of all a degrowth society requires "new forms of democratic institutions" to distribute the resources equitably. The "downscaling of production and consumption" in the industrialized countries in the process of degrowth involves increasing emphasis on quality of life rather than the quantity of consumption.

Degrowth process does not involve any involuntary economic contraction. The drivers of degrowth process is the societal change based on various individual and collective actions. Any

[9] The Global Footprint Network defined Ecological Footprint as the metric through which we can calculate the human pressure on the planet. Ecological footprint is the "impact of human activities measured in terms of the area of biologically productive land and water required to produce the goods to consume and to assimilate the wastes generated" (WWF).

[10] This definition of "degrowth society" is based on the definition agreed on by the organizational team of the Leipzig Degrowth Conference.

kind of societal change needs a change in the populations "cultural imaginary". There are some fundamental concepts of growth society like accumulation, efficiency, competition, which degrowth proponents want to replace with the concepts like distribution, sufficiency and cooperation respectively.

Degrowth does not mean economic depression or recession. Rather degrowth implies a reduction of the importance of economy in our life and the society as a whole (Abraham et al. 2011). According to Abraham (2011), "degrowth is a call for a radical break from traditional growth-based models for society, no matter if these models are "left" or "right", to invent new ways of living together in a true democracy, respectful of the values of equality and freedom, based on sharing and cooperation, and with sufficiently moderate consumption so as to be sustainable".

According to the definition given by "Research and Degrowth"[11], "Sustainable degrowth is a downscaling of production and consumption that increases human wellbeing and enhances ecological conditions and equity on the planet". Most of the time the reductionist interpretation of degrowth is limited to challenging the commanding position of sustained GDP growth in policy formulation. But the definition in "Research and Degrowth" says that, "in addition to challenging the centrality of GDP as a measure of human wellbeing, sustainable degrowth proposes a transformation in the economic system so as to give more space for human cooperation and ecosystem".

Though sustainable degrowth opposes the idea of sustained growth, it does not means an exact opposition to economic growth (Martinez-Alier et al. 2010). According to French economist, Serge Latouche, sustainable degrowth opposes growth, when it becomes an end in itself and society becomes a means to achieve this end (Latouche et al. 2009). The idea of degrowth developed in the Francophone[12] society is highly influenced by the ideas of economic anthropology and hence differs in certain aspects from the ecological economics idea of sustainable degrowth (Martinez-Alier et al. 2010).

[11] "Research and Degrowth" is an academic association which is doing research on degrowth and it also provides training, organizes awareness raising programs and events around degrowth.
[12] French speaking person or countries

Ecological economics is concerned about the physical degrowth or downsizing the economic throughput[13] (ibid). Degrowth 'as socially sustainable and equitable reduction (and eventually stabilization) of society's throughput' leads to economic (GDP) degrowth (Kallis et al. 2011). In the ecological economic discourse of sustainable degrowth the main aim is not to degrow the GDP. The central question is, whether the reduction in GDP can take place in a socially and environmentally sustainable way (ibid.). For Latouche(2006), apart from physical degrowth, decolonization of minds from economism is the center of degrowth discourse (ibid.). The actual aim of degrowth is discovering the path towards or transformation to a lower level of production and consumption for social justice, wellbeing and ecological sustainability (Schneider et al. 2010).

In the present capitalist economic system an idea such as 'sustainable-degrowth society' seems impossible and hence considered by many as a utopia. The slogan in a growth imperative society is 'grow or die'. But the idea of degrowth society envisioned by "Research and Degrowth" says that "such societies will no longer have to grow or die". Ecological economist Serge Latouche (2009) argues that degrowth is a concrete utopia. Degrowth society is a utopia in terms of the transformation which it argues in a global level, but at the same time it is concrete in terms of the policies whose implementation starts at the local level (ibid.).

From the activists points of view degrowth is an 'appropriate common representative frame' where different actors can come together because of the complementarity between the problems at hand (Demaria, Federico, Francois Schneider, Filka Sekulova, Joan Martinez-Alier, 2013). Degrowth as an 'interpretative frame' diagnoses that many distinct social and environmental crisis are related to economic growth and the 'prognosis consists of strong utopian dimension' (ibid.). Most of the time sustainable degrowth is rejected by scholars as it does not provide a single operational criterion, indicator or policy instrument (Berg et al. 2011). Understanding the alliance between degrowth practitioners and researchers is very important for understanding 'sustainable degrowth' itself. Because 'sustainable degrowth' as an umbrella keyword[14], offers a vision free from the imperative of growth which gives purpose and connects different policies and citizen initiatives' (Kallis et al. 2011).

[13] Economic throughput is measured by the material and energy flow.

[14] Kallis (2011) defines 'sustainable degrowth' as an umbrella vision as a number specific demands that can make the transition towards degrowth society possible comes together under 'sustainable degrowth'.

1.4: Research Question

How the current multidimensional crisis (economic, social and ecological) is analyzed by the ecological economists and how the degrowth proposal addresses this issue?

1.5: Aim of study

The aim of the study is to identify the instruments of degrowth (like co-housing, reduction of working hours, localization of production and consumption, tax at origin of natural resource extraction) and also the macroeconomic changes proposed by degrowth literature. A review of the recent development in the degrowth literature is carried out to find out effectiveness of the degrowth proposal and also the research gap in this field. Then the environmental effectiveness of these policies are analyzed, by comparing it with the other policies framed for sustainability. The economic efficiency or cost effectiveness of degrowth policies are pointed out. Most of the above mentioned policies are concerned with the rich countries of the global North. Impacts of degrowth policies on poor Southern countries are analyzed.

1.6: Methodology

The academic research in the field of degrowth in English language was started only in 2008. Degrowth as an interdisciplinary research area has researchers from the field of ecological economics, political ecology, sociology, anthropology and political science. Therefore, I did an extensive review of all the available literature on degrowth. Almost all research in this area is done in the European context and some Latin American countries. In order to analyze the views of different researchers on a particular degrowth strategy, the selected literature is divided according to their policy implication (like work sharing and its impact on unemployment, co-housing and urban infrastructure, localization of production and consumption, institutional changes and democracy).

1.7: Chapter Outline

In this chapter I have introduced the concept of economic degrowth in the context of the multidimensional crisis and sustainable development discourse. Then a short history of the development of the idea of degrowth has been discussed keeping in view the various alternative sustainability discourse like steady state economics and the sustainable development discourse.

In the section on the definition of degrowth, I have tried to cover all the aspects of degrowth; ecological, economic, social and political that various degrowth thinkers have analyzed. The interdisciplinary nature of the concept of degrowth has also been analyzed. All these sections have given a basis understanding of the concept of economic degrowth and will help to understand the strategies, challenges and limitations of degrowth which are analyzed in the next chapters in a critical way.

Chapter 2

Strategies of Degrowth

2.1: Introduction

Degrowth is not just an economic concept, because of the heterogeneity of its sources and strategies (Demaria et al. 2013). Degrowth practitioners do not follow a single author or book and their strategies are influenced by many social and ecological thought (ibid.). Most of the degrowth policies are formulated for increasing welfare and environmental condition while there is a decline in GDP. All the policies proposed for a transition to a sustainable degrowth society are not new and may be used in different context. In this chapter I have reviewed the literature on degrowth focusing on the strategies and policy proposed by the scholars.

2.2: Reduction in working hour and recognition of unpaid work

The discourses on 'sustainable development' depend heavily on technological improvement and hence increase in labour productivity for its success. Increase in productivity has led to increase in production and consumption, but has failed to progress towards sustainability (Bergh et al. 2011). In the process of degrowth when the growth in productivity becomes higher than growth in the economy, it may lead to increase in unemployment. In such situation degrowth scholars argues for a reduction in working hour as a strategy to solve the problem. Martinez-Alier (2009) suggested in favor of redefining the meaning of 'job' by taking in to account unpaid and voluntary work is necessary for progress towards a sustainable degrowth society.

Nierling (2012) has explained the importance of unpaid work in the transition to a degrowth society. She argued that when downscaling of production and consumption takes place in a degrowth society, increase in unpaid work is necessary to maintain the wellbeing at a high level. But in a growth society due to the centrality of paid work and increasing commodification of unpaid work, it is difficult to promote the culture of unpaid work. Hence she argued for redefining the dominant concept of work in such a way that unpaid work gets more recognition.

Nierling conducted a case study in a not for profit organization in German and used the theoretical approach on “recognition” by Axel Honneth (1995). She found that, alternative mode of mutual exchange and valuation of non-market products, which is a precondition for transition to degrowth society can be achieved if unpaid works get due recognition. When unpaid work is recognized it enhances the wellbeing of the individual and develops an alternative form of subsistence and consumption pattern.

As unpaid work is not profit oriented it is necessary to take in to account the economic security of a person while implementing any policy in this regard. Nierling (2012) suggested that, developing the culture of unpaid work is necessary for a change in the value system of growth society and for a smooth transition to a degrowth society.

Unpaid work provides hidden subsidies for the growth of the capitalist economy, but its importance has never been recognized. Alisa and Cattaneo (2013) argued for giving visibility to these unpaid works. But according to them, the feminist argument for monetizing the unpaid work activities does not reduce the unsustainable burden on women and increase the energy consumption.

Through a case study conducted in Catalonia they developed the idea of using hours as the unit of measure to make a comparison between paid and unpaid work without reducing the contribution of unpaid work to monetary value. And an analysis of the energy consumption per hour of service at home and per hour of service in the paid work sectors has been done.

The result of the case study shows that unpaid work still plays an important role in a highly developed capitalist society like Catalonia. The exosomatic metabolic rate of paid work is higher for the same services provided by the unpaid work at home. Hence reallocation of some services from the market to home may reduce the future energy demand. But the increasing number of single household family will increase the energy demand in future and can make the reallocation of services and goods to the home impossible. Because of the basic energy demand of each household and again in terms of time there is a limitation on the unpaid work that can be done at the household level.

In order to make the reallocation of work possible, Alisa and Cattaneo (2013) suggested for an increase in the level of work sharing at the household level so that the burden on women can be

reduced. At the neighborhood level an increase in cohousing is necessary to bring down the future energy demand and for reducing the workload. Hence the authors believed that, without addressing the issues of unpaid work it is difficult to bring degrowth in energy consumption, working hours and monetary economic activities.

Sorman and Giampietro (2013) have analyzed the feasibility of reducing working hour as a degrowth strategy from an energetic perspective. They used an approach called Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) to study the feasibility of dynamic energy budget of societies and to analyze the impacts on the structure and functions of the society. Using the method of Net Energy Analysis they found that, the transition to a mix of alternative low quality primary energy sources will decrease the supply of net energy. And this will lead to transfer of more labour and capital for the production of energy.

In this context this Sorman and Giampietro (2013) argued that, in a scenario of production using less resources, less capital and less energy it is impossible to reduce the working hour without reducing the wage level. If the higher wages are enforced by the government of a particular country while reducing the working hour, it can be done only through additional debt creation. This strategy is criticized by Sorman and Giampietro (2013) as a neo-liberal concept which ignores the bio-economic perspective and as the cause of many crises. The arguments of degrowth supporters in favor of voluntary reduction in working hour and energy consumption is criticized by Sorman and Giampietro (2013). They suggest that downscaling will be an unplanned and self-organized process. Any attempt to impose it through the government is doomed to fail.

Kallis (2013) critically examined the argument given by Sorman and Giampetro (2013) on the degrowth policy of reducing working hours and voluntary reduction in energy consumption. Kallis has appreciated the use of energetics and the MuSIASEM approach by Sorman and Giampetro, but he has criticized them for downplaying the possibility of voluntary personal and community initiatives in transition to a degrowth society.

Kallis (2013) argued that, voluntary simplicity can play an important role, if appropriate institutional restrictions are placed in conserving the energy saved from simplicity. He has given three important arguments in favour of reducing working hour by referring to the literature of

degrowth. First of all degrowth proposals do not call for a reduction of working hour in general, but for the reduction of working hour in the paid sector only. In the long-term energy shortages will force the people to work long hour, and reduction and sharing of working hour will not work effectively. But in the Short-term, if the scale of economy is limited due to climate mitigation policies, the increase in productivity will lead to higher unemployment. Kallis (2013) used the idea of Victor (2008) and argued that the policy of reduction of working hour and redistribution of paid work can solve the problem.

Kallis (2013) used the idea of Hirsch (1976) and Latouche (2009) to further his argument that, from a welfare point of view, the increasing commodification of work in the western countries and the resulting monetization of the economy can be reduced by reducing the working hour in paid work sector. Most importantly, the reduction in working hour is not going to reduce the wellbeing of the people, if appropriate redistribution policies are undertaken. Again he used degrowth proposal of a universal basic income as a right developed by Martinez-Alier (2009), to argue that the reduction in per capita GDP will not lead to reduction in wages in the same proportion. Finally, Kallis (2013) said that an organized societal downscaling will not lead to additional transaction costs, because, degrowth proposals believe in more decentralized form of democracy, where decision making takes place at a local level

Bauhardt (2014) has explored the various alternatives to the capitalist mode of growth and argued that these alternatives are gender blind. The definition of crisis of the growth society from the eco-feminist economics perspective differs from that of a degrowth perspective. Degrowth questions the excessive production and consumption in a capitalist growth society and believes that the resulting excessive emission leads to ecological and societal crisis. In order to stop the excessive exploitation of natural resources, degrowth advocates for stopping all the policies which aims at economic growth and restructuring all the economic sectors and institution to free them from growth mania. In a post-growth or degrowth society priority is given to better education, health and other social security measures. Most importantly the financing patterns need to be free from growth oriented activities. Degrowth also speaks about reduction of working hour and self-sufficiency in the care sector and hence ultimately more jobs in the service sector.

Ecofeminist economics defines the crisis of the capitalist growth economy as ecological crisis as well as crisis in social reproduction. Because they say that in a capitalist society there is a similarity in the way both natural resources and women's work are exploited. In the capitalist economy both are essential but considered costless. Hence the mode of production in capitalist economy not only put pressure on natural resources but also on the care work supplied by women.

Degrowth thinkers argue for change in the production and consumption patterns and a shift in the economic activities to sectors which are publically financed and personal care services. As most of the care work both in the realms of paid as well as unpaid sectors is done by the female, the post growth society will put more pressure on women. Bauhardt (2014) argued for creating awareness regarding the gendered nature of some work. The increased household works due to change in consumption patterns also pressurize the care labor. But the pay gap between the male and female force the females to remain in the care sectors. So, she suggested that equal distribution of income and power is necessary for creating gender equity in a post-growth society. This can be achieved only when there is an equal distribution of both paid and unpaid work among men and women. However, none of the degrowth economist argues in this perspective.

Bauhardt (2014) argued that the supply of both natural resources and women's caring labor are finite and hence any alternative to capitalist growth economy must consider the gender order as a part of the capitalist order. Sustainable degrowth can be achieved only when we respect both the natural and social limits to growth.

2.3: Job Guarantee

Alcott (2013) articulated the need of job guarantee for a smooth transition to degrowth society. Many degrowth thinkers argued for a reduction in working time in the developed countries to reduce the throughput. But the concept of job guarantee defined by Alcott (2013) analyzed the problem of distributing the existing paid work among the jobseekers. He argued for separating the concept of income and work to understand it properly.

Most of the real world jobs guarantee programs are either confined to a particular class of people or designed for a short period of time. In order to maintain social and political stability in a

degrowth society, job guarantee programs should target all citizens of a country and should be permanent in nature. Hence Alcott (2013) argued that, work should be a political right, rather than merely serving for higher economic growth.

In the current growth society all job guarantee programs have to justify their economic rationale as most of these programs are designed in response to a particular economic problem. These programs are of limited utility as they try to ensure job guarantee in an indirect way. But the idea of job guarantee developed by Alcott (2013) is defined legally and it is independent of the economic condition. Alcott is not in favor of waiting for institutional changes, instead he suggested for solving the problem with in the existing institutions.

2.4: Strong Sustainable Consumption

From the definitions of degrowth by various thinkers discussed in previous chapter it is clear that the process of degrowth involves a reduction in the scale of consumption in the industrialized countries of global North.

Lorek and Fuchs (2011) emphasized the need for a joint research by the degrowth and sustainable consumption scholars. In this context they discussed how the existing literature on sustainable consumption can strengthen the call for degrowth. Similarly they argued that the policy of strong sustainable consumption can be implemented only where the degrowth ideas are acceptable[15].

Lorek and Fuchs (2011) elaborated on three areas of strong sustainable consumption research which can contribute to the degrowth debate. First of all the norms and values in strong sustainable consumption governance regarding voluntary reduction in material consumption and sufficiency strategy can help degrowth debate. The ideal of well-being developed here is not

[15] According to Lorek and Fuchs (2011), most of the research on sustainable consumption is dominated by the weak sustainable consumption approach, which is based on market based instruments and technological optimism. What is important from degrowth perspective, is the strong sustainable consumption approach, which talks about the level and patterns of consumption to achieve a more just distribution of resources. Keeping in view the ecological and social challenges of the current consumption pattern, the interaction between strong sustainable consumption and degrowth scholars is necessary.

fully dependent on material consumption and it is in favor of long term gain. It is not merely about reducing the consumption of a particular good, rather it believes in structural changes in life styles. Secondly the political obstacles in implementing strong sustainable consumption policies are more likely to impact the implement of degrowth strategies. Individual initiative for sustainable consumption is limited by the obstacles created by the consumer society. The manufacturers may adopt the best practices from ecological point of view, but, they never compromise on the level of production. Within the existing institutions of a consumer society the government is also bound to implement policies not conducive for strong sustainable consumption. Thirdly the political strategies suggested by strong sustainable consumption research can help implement degrowth policies.

The first strategy suggested by Lorek and Fuchs (2011) is to create a sense of urgency and try to convince the policy makers and general people that the transition can be done in a smooth way. The wellbeing that can be derived from such policy should be communicated to the people. Social innovations can change the pattern of consumption in large scale if there is good communication and feedback mechanism between different layers of governance. The NGOs working on sustainability issues need to understand the common goal of sustainable consumption and should develop the debate and values to foster sustainability in the true sense. Government need to use its information dissemination mechanism to spread the values of sustainability and should bring in the necessary institutional and structural changes to encourage individual initiatives. They suggested for further research on this line to make the transition to a degrowth society more just and sustainable.

One of the main principle of degrowth is, reduction in consumption level. Spangenberg (2014) has argued that, if degrowth is implemented without changing the existing social, economic and political institutions, it cannot ensure social sustainability. Given the unequal wealth and consumption distribution, he has explained how consumption level can be reduced in a socially sustainable manner.

In order to explain the dual goal of degrowth, Spangenberg (2014) has introduced the concept of environmental space defined by Opschoor (1987), who argues for a universal right to per capita environmental space. Further elaborating the concept of environmental space Spangenberg (2014) discussed the ceiling of environmental space which can be scientifically defined. From

the ecological sustainability point of view sustainable consumption is not limited to reducing the consumption of a particular good, but the ability to reduce the level of consumption in a world of declining resource reserves. For social sustainability, floor of environmental space needs to be defined socially, keeping in view the human dignity and distributional justice.

Spangenberg (2014) developed the idea of strong sustainable consumption via redistribution of resources towards the community whose marginal utility is highest and imposition of constraints on resource consumption. But the existing institutions pose certain limits on the consumption choices available, through the financial incentives, product designs and marketing strategies. Thus, equitable redistribution does not always ensure sustainable consumption. Hence, Spangenberg (2014) argued that the policy of capping and restriction on marketing strategies which suggests that more is always better have its own importance. Implementation of an unconditional minimum income, progressive pricing, innovations of better quality product with more durability, and most importantly strengthening democracy is necessary for strong sustainable consumption. From the degrowth perspective, he suggested that the social sustainability part needs radical institutional change for changing both the perception towards social problem and for creating new tools to deal with them.

2.5: Farmers Market, Organic Farming, Local and Seasonal diet

Boillat, Gerber and Monzote (2012) tried to find out how the economic system and democratic principles affects the transition to a degowth society. Hence, they have compared the various agricultural exploitation system of Cuba[16] with the various theoretical politico-economic models. And most importantly, they explored the relationship between the autonomy in decision making and the adaption of ecologically sound practices.

The collapse of Soviet Union and the U.S. embargo during 1989 forced Cuba to explore organic and semi-organic farming. During the crisis between 1989 and 1993, Cuba's imports, GDP fell drastically negatively affecting many public provisions including the food security. Cuban government responded by taking various technical, institutional and economic measures in the field of production method, land ownership and accessibility to markets.

[16] Cuban agroecology is the largest real life example of degrowth in the agricultural production system of a country.

The technical measures undertaken include the promotion of agro-economic research such as innovation of biological pest control and bio-fertilizers, promotion of use of bio-gas and investment in developing the traditional cropping techniques. Some institutional reforms in the ownership of land were undertaken especially in the state owned firms. The size of state owned farms were reduced and ''Basic Unities of Agricultural Production'' (UBPC) were created. Urban agriculture and gardening was promoted. And the development of labour intensive organic farming and collapse of many industrial complexes led to migration from urban to rural area. The economic measures include the most important decision to reopen the farmers market. The higher prices in farmers market encouraged farmers to produce surplus above the state contract amount.

In order to make the discussion relevant to "degrowth", the performances and agricultural practices of the "Credit and Services Cooperatives'' (CCSs)[17], "Cooperatives of Agricultural Production" (CPAs)[18] and UBPCs are analyzed in accordance with the principles of degrowth. After the crisis even if there was a shortage of agricultural inputs, the productivity of CCSs and CPAs remained high. The CCSs and CPAs successfully used ecologically sound practices and developed an organic and low input diversified agriculture. But, under UBPCs the lack of autonomy in decision making developed many management problems. This resulted in large amount of unutilized land and underutilization of resources.

Though the UBPCs have many characteristics similar to the Participatory Planning Model, due to lack of any incentive to implement ecologically sound practices, the authors criticized it from a degrowth point of view. CCSs can be described as market socialism model. From the Cuban experience the authors dismiss it as it resulted in resource overuse and as it basically mimics the capitalist growth model. CPAs on the other hand are similar to self-managed socialism where there is autonomy to adopt sound agro-ecological practices. Most importantly the regulation by

[17] In order to understand the transition of the agricultural production system Boillat, Gerber and Monzote (2012) have given a brief account of historical land exploitation system in Cuba. After the 1959 Cuban revolution around 70 percent of the land was under government control and highly mechanized methods were implemented in these state owned farms. Small farmers owned only 12 percent arable land and ''Credit and Services Cooperatives'' (CCS) were created to help them.

[18] During 1975, the small farmers of Cuba were encouraged to work in co-operatives by voluntarily group their land and means of production. This gave birth to the "Cooperatives of Agricultural Production" (CPA).

Cuban government on availability of chemical fertilizers and dealing in land market and speculation in land makes the CPAs model is more effective in a successful transition to a sustainable degrowth society.

Amate and Molina (2013) analyzed the Agri-food System (AFS) of Spain from the energy efficiency point of view with the objective to estimate the energy balances in Spanish agriculture. They argued that prior to industrialization the Spanish agriculture was the main source of production of energy. But, after industrialization a new economic process emerged between production and consumption which made the Spanish agriculture a net consumer of energy. The increasing difference between agrarian product and food product and the new dietary habits are the consequences of the industrialization of agriculture. Over the years the per capita consumption of nutritional energy of the Spanish people has increased and as a result around 41 percent of the population is overweight. The changing diet has increased the territorial cost of the food items in terms of energy and ecological foot print has been worsening.

The methodology proposed by Heller and Keoelian (2002) in their study of the Life cycle analysis of the U.S. food system for late 1990s has been used in this paper to calculate the energy use of the AFS at an aggregated level. Here the energy consumption of six main activities in AFS has been done, such as agrarian production, processing, packaging, distribution, transportation and domestic energy consumption.

In order to introduce degrowth in the Spanish AFS they have suggested some ideas. In the case of agrarian production the mere increase in the efficiency of the machinery will not lead to any betterment of the energy balance. Hence they argued for complete change in the production system by introducing organic production. One of the main drawbacks of the Spanish livestock farming is its heavy dependence on the imported food grain to sustain this activity. It is highly ecologically unsustainable due to the worsening ecological foot print. For this they suggested a change in government policy related to the livestock production and also emphasized the change in consumption pattern.

Economic globalization is one of the main reasons for increasing energy consumption by AFS. Mainly the intra-national transport of food items by smaller vehicles is not an efficient way of transporting. Here the localization of food production and consumption can help in increasing the

energy efficiency. Again the localization of these activities leads to a change in the dieting habits of the people towards seasonal foods. This helps in reducing the energy used in packaging and processing to a great extent. Localization of agricultural activities provides the farming community a security against the volatility of world market. The energy consumed by the private consumers by travelling to the retail points for food items can be reduced by encouraging better public transport. The energy efficiency of cooking food not only depends upon the kinds of domestic appliances but also on the type of food. Hence the change in food basis is necessary for energy efficiency in cooking.

After analyzing the Spanish AFS they found that in order to achieve sustainable degrowth, the focus on agrarian production is not sufficient. The economic process between production and consumption also needs radical changes. Spain is a leading country in the field of organic cultivation in Europe and the localization of consumption and seasonal diet is increasing in Spain. Hence they argued that Spain can go for degrowth in its AFS in a sustainable manner.

2.6: Co-housing

The increasing competition, stress and hyper individualism in cities demands for an alternative institutional solution. Lietaert (2010) argued that cohousing[19] can solve most of the problem of the urban life and it can bring degrowth at the family and neighborhood level. Cohousing is not a new concept. It was started 35 years ago in Denmark. But, Lietaert argued that in a post-industrial society where people generally do not live in the area where they work, the introduction of cohousing is totally a new concept. He called it a social movement because here the urban people instead of passively accepting the stress of urban life are developing new institution to solve their problems. The various real life experience from cohousing shows that, living in cohousing can alternate the daily consumption habits of the residents towards a collective action. The efficient sharing system developed in cohousing can reduce the expenditure and save energy. This has a positive impact on the environmental footprint.

[19] Lietaert (2010) defined; cohousing communities are neighborhood development where 15 to 35 families i.e. around 50-100 people come together and mix their private and public facilities according to the social and practical need of urban life. It creates a sense of community without hampering the privacy of the cohousers. There is no rigidity in the construction of cohousing facilities and the cohousing community can develop their facility according to their affordability and their cultural context. The use of bottom-up approach by the cohousing movement successfully created a non-market relationship among the cohousers to solve their problems without any government support

Lietaert (2010) emphasized basically six fundamental characteristics of cohousing which are essential for sustaining a cohousing community. First the development of cohousing is a participatory process where the cohousers are the driving force. Second one is the intentional neighborhood design. Third and the most important characteristic of every cohousing facility is development of large number of common facilities. Fourth is the management of cohousing affairs completely by the resident themselves. The fifth characteristic is that all the cohousers should have an equal say in the decision making process. The final one is the separation of income earned by the residents in a cohousing community, that is, each cohouser has to be financially self-sufficient.

Lietaert (2010) warned about some of the limitations of cohousing which may contradict with degrowth principles. The experience from various cohousing shows that merely living in cohousing may not reduce the ecological foot print. It varies from community to community based on their level of awareness and priorities. Again the level of community sharing is not developed to the optimal level in many cohousing. One of the important drawbacks of the cohousing is that most of the cohouser belongs to the middle and upper-middle class. Hence it may remain as an elite phenomenon.

Cohousing is an opposition to the dominant ideology of unlimited growth which is directly linked to the massive media advertising of unnecessary products and the popular utopia of hyper individualism. Cohousing is strongly related to the degrowth movement at the micro level of urban neighborhood. Both the movements aspire for better quality of life. Hence, Lietaert recommended that the government should step in to help the low income families and to make the cohousing movement a widespread way of life.

2.7: Social Capital

Andreoni and Galmarini (2013) have brought in the concept of reciprocity in to the debate of degrowth and explained how well being can be generated through the creation of social capital. The concept of degrowth is based on the quantitative reduction in production and consumption

and also the increase in the quality of life. They argued that most of the literature on degrowth deals with these two aspects of degrowth separately. The debates on social metabolism deal with the scale of socio-economic system and the biophysical limits of the planet. And the wellbeing part is handled separately by what the author called the "Quality of life school".

In order to explain the economy of reciprocity, the concept of subsidiary production principle and conviviality has been introduced. Subsidiary production principle gives emphasis to production based on the local needs. Localization of production and consumption reduces the energy consumption in transportation and storage and increases the social capital by bringing the producers and consumers together. Conviviality is a non-market social relationship where human needs are satisfied through voluntary work, community exchange, etc. Therefore conviviality not only increases the wellbeing but also strengthens the social capital. They have given the example of cohousing to explain conviviality. Cohousing exemplifies how wellbeing and reduction in energy consumption can be achieved simultaneously.

Andreoni and Galmarini (2013) argued that the perception that progress and wellbeing is a byproduct of consumption is the root of all problems. Degrowth society can effectively deal with these problems by bringing the social and environmental dimensions along with the material dimension of wellbeing.

2.8: Decentralized Water Supply System

Domenech, March and Sauri (2011) brought in the concept of degrowth to the urban water sector. Four alternative non-conventional water sources (desalinated sea water, reclaimed water, rain water and grey water) are analyzed by them to find out their compatibility with degrowth principles and their practical socio-environmental impacts. The method of social multi-criteria evaluation (SMCE) is used here to analyze the financial, social, environmental, technological and institutional considerations of the alternative sources, both in a growth and degrowth scenario.

The result of the analysis shows that the centralized non-conventional water sources like sea water desalination and reclaimed water are financially more efficient due the economies of scale. But the author argues that the cost of the desalination is going to increase in the future because of the high energy prices and as a result the other non-conventional sources will become more

competitive in both growth and degrowth scenarios. From a social point of view in a degrowth scenario public acceptability plays the most significant role, as the inclusiveness and bottom-up approach in decision making is very important. As per degrowth principles rain water harvesting and grey water[20] is the most acceptable alternatives.

Environmental considerations also shows that the decentralized water supply system are less energy intensive due to the reduced transportation cost and also the energy required for water treatment in case of rain water harvesting system is very negligible. Degrowth supporters argue for the use of local technologies and the rain water harvesting and grey water system that can run by the use of very simple and local technology. When they considered the views of various social actors involved in the system, rain water harvesting came out as one of the most preferred alternative.

Successful implementation of an alternative water supply system according to degrowth principles not only reduces the level of water consumed but also makes the system more democratic, where water is treated as a common good. This suggested that the adoption of the decentralized water supply system is essential for transition to a degrowth society.

2.9: Decentralized Climate Policy

Tammilehto (2012) has explained how the reduction in carbon emission can be achieved in a nonviolent manner through social change. The policies adopted by the international institutions to reduce the pace of increase in global temperature must consider the per capita generation of carbon and the allowable increase in emission should be done accordingly. This means that the industrialized countries have to cut their production and consumption. But intentional reduction in a capitalist growth society is very difficult and is against the popular view that any reduction in growth will lead to unemployment and social instability.

In this context Tammilehto (2012) emphasized the importance of derowth movement to solve the climate catastrophe. Tammilehto said that some of the standard assumptions of the capitalist growth society need to be questioned. The degrowth movement questioned the correlation between increase in consumption and human wellbeing. Any social change can take place only

[20] Grey water is the water from bathroom sinks, showers, washing machines, tubs that has not come in to contact with feces.

when people think that their interest is not represented properly by the state. Tammilehto (2012) discussed some social movements to question the popular believe that all historical revolution to bring social changes were not violent.

Contrary to the popular perception that degrowth means a new form of asceticism, Tammilehto (2012) said that degrowth may lead to growth of an alternative economy. This informal economy exists due to the common wealth created by the nature and culture which is very much important for the survival of mankind. Tammilehto (2012) said this is the paradox of degrowth as "growth". In addition to the official institutional thinking, alternative thinking among some people leads to various social interaction and formation of groups. This makes the society more flexible where social revolution can take place. Hence Tammilehto (2012) concluded that the social change by degrowth movement may lead to a desired solution to the climate problem in a democratic and nonviolent manner.

2.10: Concluding Remarks

In addition to the strategies discussed in the previous section, there are some other strategies like eco-villages, solidarity economy, squatting, creation of alternative local currencies and new local financial institutions, etc. which are also very important. Degrowth scholars have argued in favor of some alternative taxes like tax at origin to control pollution. Alexander (2012) for example argued for a Negative Income Tax. And he brought in the idea of highly progressive income and consumption tax developed by Frank (2008) in to the degrowth debate. There are some debates around the population question also (Martinez-Alier et al. 2009). But the population question has not been addressed properly by the degrowth thinkers. But all these strategies are not fully developed and hence need further research.

Chapter 3

Challenges for Degrowth

3.1: Introduction

One of the fundamental problem or question concerning degrowth is whether the existing capitalist market economies will degrow voluntarily. Kallis (2011) says that radical change in the foundational institutions of capitalism is necessary for any transition to degrowth. In this chapter I have reviewed the available literature on degrowth which deals with socio-environmental justice, the institutions of capitalism and critically examines the existing democratic set up.

3.2: Democracy and Degrowth

Bonaiuti (2012) has analyzed the limitations and paradoxes of a representative democracy from a degrowth perspective. His main focus was the qualitative difference between democracy and autonomy. Autonomy as a search for awareness and as a process to understand the subconscious dimensions of our imaginary is necessary for the transition to a degrowth society. In order to understand the present socio-economic and ecological crisis Bonaiuti analyzed the relationship between growth, accumulation and innovation process.

Bonaiuti (2012) said that the three pillars of degrowth are derived from the criticism of the process of a long-term positive feed-back between growth, accumulation and innovation and the resulting new institutions. Exponential growth requires continuous innovation and up gradation and most importantly exploitation of natural resources at ever higher pace. The ecological criticism of this process is the first pillar of degrowth. The second pillar of degrowth emerges from the criticism of the process which leads to an increase in inequality and dissolution of the societal ties. The criticism of the dominant imaginary of unlimited freedom of a growth society is the third pillar of degrowth.

In the last section of his paper Bonaiuti (2012) explained about four paradoxes in a democracy which are very much related to the scale of organizations and the growth process. The state, its bureaucracy becomes so large that it becomes difficult for every citizens to participate in the

decision making process. With the new innovations and increasing complexity, policy decision most of the time depends on the technocrats. The very idea of democracy and autonomy is endangered when the ideas of individual are shaped by the growth society. All the above mentioned paradoxes, lead to tradeoff between growth and autonomy.

In this context, Bonaiuti (2012) concluded that degrowth policies which questions the dominant imaginary of a growth society is very much relevant to deal with crisis. The emphasis on strengthening societal ties, creating alternative mode of exchange, developing participatory local communities and promoting socially responsible innovation, etc. by degrowth advocates will make the transition to a degrowth society easier and more democratic.

The present crisis in political democracy is a result of the concentration of economic power in few hands. In this context, Johanisova and Wolf (2012) argued that some aspects of economic democracy[21] is necessary for a smooth transition to a degrowth society.

Six different aspects of economic democracy and the link between these aspects and there relevance to degrowth debate has been explained by Johanisova and Wolf (2012). First of all there is a necessity to regulate the market mechanisms and corporate activities. Through harmonization of environmental, social and trade laws it is possible to achieve both economic democracy and degrowth. Secondly, establishment of social enterprises on the basis of a co-operative structure can lead to production for the satisfaction of real needs and also decentralization of power. Production and consumption on a localized basis is more sustainable and free from the uncertainties which prevail in a globalized market. Thirdly the mechanism of money creation through fractional reserve banking has been criticized. The power to create money and grant loans allows the banks which are again not democratic in nature to shape the investment and hence production of goods which are not compatible with degrowth principles.

The forth aspect for economic democracy is a right to reclaim or re-create the commons whose management ethic is a challenge to the growth ethics and very conducive for economic democracy and degrowth. Redistribution of capital including energy, land, financial institutions

[21] Economic democracy is defined by Johanisova and Wolf (2012) as placing restrictions on the concentration of capital and enabling every citizen to actively participate in the in the economy.

to encourage localized production and consumption is the fifth aspect of economic democracy. Finally the concept of economic freedom introduced by Vandana Shiva (2005) has been discussed. Economic freedom in the real sense is the right to choose not only what to produce and consume but also how to do it. This is necessary from a degrowth perspective.

Deriu (2012) has discussed the need for regenerating the democratic institutions in order to make the transition to a degrowth society easier. The historical development of democracy and free market contributed to each other. But the growth imperative in the last few decades challenged the very idea of democracy. With the development of many international institutions, many decisions which affect a country are taken in very undemocratic setup. So the present representative democratic systems of many countries are incapable of keeping the interest of the present and future generation of their own country.

In the classical political theories, the discussion on democracy does not consider the limits imposed by nature. Hence the issues of intergenerational democracy is completely absent in these debates. In this context the principles of degrowth reopen the debate to regenerate democracy and make it sustainable.

Deriu (2012) has suggested some scenarios not only to regenerate democracy but also to make it more acceptable at the grass root level. Self-education and citizen training to generate critical thinking in every one as a 'global citizen' is necessary to support democracy in future. Deriu (2012) has emphasized the concept of 'earth family' developed by Shiva (2005). According Shiva (2005) the rights of all present and future generations of both human and non-human species are important for a democracy. The effective participation of local communities and all stakeholders in any policy and project, which may impact them, needs new procedural rights. To enhance the quality of participation of common people in a democracy the rising cost and the influence of strong economic actors in the electoral process should be checked. Direct democracy and deliberative democratic practices can be adopted to increase the participation of citizens. The importance of commons in challenging the dominant idea of private property and promoting the values of 'earth family' needs to be recognized. The present form of representative democratic institutions should be reorganized and new institutions should be created to handle the ecologically sensitive issues. These new institutions should consider

appropriate bio-regions and wider time frame to deal with the issues. Hence Deriu argued that the proposal of degrowth cannot be implemented in the present democratic set up.

Borowy (2013) tried to find out whether the Cuban model after the economic crisis can be defined as a model of degrowth. As the Soviet Bloc broke down in 1990, Cuba's GDP and import reduced drastically. Cuban people started protesting against the government, as the crisis resulted in breakdown of the public health, shortages in food items, impacted the mobility of the people and unemployment was on the rise.

The government's response to cope up with the situation was quite innovative. Prior to the crisis in Cuba 80 percent of the land was under government control and a very effective food distribution program was there. In order to solve the problem government initiated a large scale reform in the ownership pattern of land by introducing cooperative farming and relegalized the farmer's market. The U.S. embargo positively affected Cuban agriculture, as organic farming stated with labour intensive technology. During this period urban people with the help of government started cultivating where ever some land was available. All these measures to solve the food security problem generated other benefits such as it generated employment opportunity and fresh food items were accessible near the town which also reduced the fuel consumption.

The shortages in health related materials were compensated by increasing the man power employed in health sector. And the expenditure in public health was raised substantially. All these measures changed the life style of Cuban people in a healthy way. As a result several health indicators improved during this period.

As Cuban manufacturing sector was heavily depended on imported machinery, after the outbreak of crisis unemployment was on the rise and industrial production was on a decline. To improve the employment scenario the government introduced labour intensive agriculture, paid work at home and study as work program. This resulted in a change in the composition of work force by sector of activity. The proportion of work force concentrated in the less productive sectors like the social and community service was rising. As a result it was criticized by the neo-classical economist from an economic ground. But, according to Borowy (2013), these policies stabilized a society in crisis.

Borowy (2013) found out the relevance of these policies towards a degrowth society. He argued that, while the impact on health, changes in agricultural production system and some of the

changes in transportation are in line with degrowth principles, some other policies of Cuban government strictly contradicts the degrowth principles. The coercion and top-down approach adopted in Cuba in implementing certain policies are opposed to the sustainable degrowth policies. Most importantly Borowy (2013) said that, 'they changed because not changing was not an option'. And the massive emigration, rising inequality in Cuba after the crisis shows that the resulting changes in life style was not due to any concern for the ecology, but because of there was no other option.

Borowy (2013) emphasized the uniqueness of Cuba from certain way that helped it to implement the degrowth policies quite easily. The priority on universal health and education, the small size and homogeneity of population and the experience of Cuban people about group support and group control helped them to deal with the crisis easily. And as the crisis emerged as a result of external forces, Cuban people were expecting large scale changes in policies. In spite of all these the crisis failed to change general attitude of the people and their consumption and production method are increasingly becoming fuel intensive. Hence he concluded that social cohesion, changes in life style are important but, it should be done without any repression and in a democratic way.

3.3: Capitalism and degrowth

Foster (2011) has critically examined some of the degrowth strategies of the 'European Degrowth Project' in general and the ideas of Latouche (2006, 2009) and Joan Martinez Alier (2009, 2010) in particular. The central question raised by Foster is about the viability of the degrowth strategies in capitalism[22]. The European degrowth project advocates for a reduction in production and consumption and hence in the GDP of a country, without changing the capitalist logic.

The degrowth project of Latouche (2006), accepts the possibility of an 'eco-compatible capitalism', and believes that stronger environmental regulation in capitalism is possible. Hence it does not question the private ownership of means of production. Joan Martinez Alier's (2009) argument for solving the problem of unemployment through more "public investment in green technology and infrastructure" also comes within the logic of capitalism. The idea of shorter working hour as a solution to unemployment on a large scale within capitalism is questionable.

[22] Here 'capitalism' represents the idea of capital accumulation.

Foster (2011), brought in the argument of Paul Sweezy (1989), who argued that," what is essential for success is a reversal, not merely a slowing down" keeping in view the planetary boundaries. Most of the thinkers question economic growth at an abstract level, hence the social and economic impacts to different class is not addressed. Foster (2011), suggested that a radical change in the relation of production of capitalism is essential for a transition to a degrowth society.

Klitgaard and Krall (2012) have examined some of the alternative economic framework historically and explained why the standard ecological economics model failed to provide a solution to the cyclical fluctuations and the problem of rising unemployment. In market capitalism the decline in the growth rate of the economy is the main reason for rising unemployment. Ecological economics is good at explaining the external limits set by the biophysical capacity on the economy. But it has failed to understand the internal institutional structure which leads to this problem.

The standard ecological economics model takes market as an allocative mechanism and neglects the functions of market as a social institution in market capitalism. The solution given by the ecological economists for maintaining the ecological integrity of the planet like; the promotion of ecologically benign investment, transition to a renewable energy based economy are not going to work in solving problem of cyclical variations and secular stagnation. Klitgaard and Krall (2012) suggested that any attempt for transition to a degrowth society must take in to account the institutional structure of the market capitalism where the feedback loops now are more sensitive.

Griethuysen (2012) has examined the alternative institutional arrangements to the current institutions whose foundation is the property based economic rationale. He argued that before implementing any policy for transition to a degrowth society it is necessary to understand the growth process. In order to elaborate the institutional foundations of capitalist system and the institutional and technological lock-in, the property economic theory of Heinsohn and Steiger (2000) has been used.

The property based economic rationale subordinates the eco-social considerations and leads to concentration of power in the hands of few capitalists. The degrowth project on the other hand argues for a complete change in the economic rationale and the hierarchy of social norms. Hence

the Griethuysen (2012) suggested some polices that can contain the process of appropriation and capitalization, and can make the eco-social consideration acceptable.

He argued for limiting the scope of property domain by changing the formal institutional framework which is responsible for the growth imperative. According to Griethuysen (2012), only first-order capitalization process is compatible with the degrowth principles. He emphasizes on orienting investment so as to make more responsible investment. Policy for distribution of created wealth and allocation of monetary returns should be implemented. In order to derive an integrated strategy out of the above mentioned strategies Griethuysen (2012) argued for an institutional alternative to private property.

State property, common property regimes are emphasized by Griethuysen as alternative to private property. He suggested the need to strengthen the common property regime and promotion of internal self-organization by the local communities for transition to a degrowth society in more equitable and sustainable manner.

3.4: Rule of Ecological Law and Degrowth

Garver (2013) has explained the need of a legal regime which respects the system based ecological constraints and how the degrowth movement can help in implement such laws. The need of an alternative legal regime emerged due to the limitations of the existing environmental laws. Although the current economic system has crossed the ecological limits, in the current growth imperative economic system any policy to curtail the production and consumption create panic among the people.

The rule of ecological law takes in to account not only the legal principles but also the global ecological limits determined by the planetary boundaries. Garver (2013) argued that both the ecological law and degrowth movement have the same objective to reduce the throughput of material and energy. Hence the degrowth movement can help in bringing the ecological law to the mainstream.

But, some of the core features of the rule of ecological law contains certain elements which contradicts the degrowth principles. The intervention of supranational authority while

formulating the ecological laws is against the degrowth principles. Degrowth movement supports local organizations as it promotes democratic culture.

Graver (2013) argued that the opposing narratives of growth and degrowth will strengthen the degrowth movement and create opportunity for transformation of the current economic system to a degrowth society. The emergence of rule of ecological law can take place only under a degrowth regime.

3.5: Environmental Justice and Degrowth

Martínez-Alier (2012) defined environmental justice in the context of the setting up of the most polluted industries and waste disposal in areas where the people are politically weak and they belongs to any resource rich underdeveloped country. He talked about both intergenerational and intra-generational distribution of resources and pollution. Most of the ecological conflicts are arising because of the desire for unbounded economic growth which increases the social metabolism. The resource rich undeveloped/underdeveloped countries are subsidizing the growth of industrialized nations. The developed nations are successfully using their economic and political power in the name of globalization and liberalization to excess the resources of the poor countries and diverting the most polluted activities to these countries.

The main stream economists believe that the extraction and export of the cheaper raw materials from the resource rich underdeveloped regions should continue as long as they are compensated monetarily for this. Again the financial requirements of these countries for developmental projects are satisfied through these exports. The traditional Marxists also believe that environmentalism is a pass time for the rich and the poor masses cannot afford it. Martínez-Alier (2012) criticized both of these views. According to him the model of exporting the cheap and importing expensive, i.e. the resource curse is not sustainable and it totally ignore the ecological debt. The monetary compensation cannot compensate for the loss of the biodiversity or the increased concentration of greenhouse gas which adversely affects the livelihood of the tribal and indigenous people. Most of the extraction industries set up through displacing the indigenous people and diverting pollution burden towards them. And in most cases the monetary compensation is either absent or very less. So, in this case when the market undervalues

pollution, it is not considered as a market failure, rather it is accepted as a successful cost shifting strategy.

The technology transfer from the developed world particularly for agricultural purposes is economically efficient as it has increased both the labour and land productivity. But from energy efficiency point of view it has failed, as modern agriculture is consuming more energy than the amount of energy it is producing. So, in net terms modern agriculture has become a consumer of energy. Most of the environmental justice movements raised these questions.

The degrowth movement which basically aroused in the developed world also criticizes the aim of economic activities in capitalism to maximize monetary gains. Again it criticizes the generalized market system created by capitalism and emphasizes that economic activities should focus on maximizing the use value over the long run. Martínez-Alier (2012) gave the example of Easterlin Paradox, which says that, "increases in happiness correlate with increases in income only below a certain level of per capita income." All the social movements like co-housing, squatting, alternative energies, recycling, from which the degrowth movement gets its strength, emphasize on distribution issues and unjust property rights. Degrowth movement also argues for reducing the social metabolism.

Martínez-Alier (2012) argued that both the movements support a post-extractivism and argue in favour of protection of human as well as territorial rights. And he emphasized the recognition of ecological debt is instrumental for any kind of solution to the problem of unequal distribution of ecological burden.

Muraca (2012) has examined the question of justice in the context of growth/degrowth debate from an ethical point of view. For the understanding of distributive justice as a theoretical framework, the capability approach of Sen (2009) and Nussbaum (2000) has been used. According to the capability approach the notion of good life is determined by a person based on the things he/she may value doing. There must be sufficient freedom to achieve such a life. Here income and goods have value only if it can help in achieving the functioning and the preference for a certain functioning cannot be explained by utilitarian approach. In such a society the notion good life differs from person to person and hence institutions must be developed to respect the different views. The issue of intergenerational justice has also been raised in this paper.

The idea that growth is a precondition for achieving distributive justice has been criticized from degrowth perspective. The concept of Environmental Kuznet Curve and higher efficiency in resource use, which is used by the supporter of exponential growth, has been criticized. Muraca argued that, economic growth in a globalized and liberalized world economy is responsible for geopolitical domination and economic dependency. Intergenerational justice is considered only as an impediment in the path of maximization in a growth society.

Growth as a currency of good life and happiness has been criticized on the basis of subjective, objective and inter-subjective conditions considered necessary for a good life. The endless competition in a growth society impacts the subjectively perceived happiness in a negative way. As the standard for a 'good life' increases every time, the material needs also increases simultaneously and it may hamper the capabilities to function. As a part of the society, individuals choose a functioning which he/she can claim as an idea of good life. But the effective participation in the decision making is limited by the huge material disparities and the discriminatory value system in society.

The principles of degrowth like; re-localization, reducing paid work activities, demonetization of care services, etc. also need careful scrutiny. Radical re-localization may ignore the relations of oppression and domination within a society. Paid work is considered as a fundamental right in a growth society as per the capability approach. Reduction of paid work activities not only needs political and institutional change, but also alternative forms of recognition and change in social values. Transferring care activities to house hold sector needs to address the issues of gender disparities. In this context, Muraca (2012) suggested the degrowth proponents to address the issue of justice more rigorously.

Chapter 4

Conclusion

4.1: Analysis of degrowth strategies

Discussion on economic degrowth in the previous chapters have made it clear that reduction in the scale of production and consumption in the rich countries of global North is imperative for a transition to sustainable degrowth society. The fact that economic degrowth in a capitalist market economy will lead to recession or depression and the resulting rise in unemployment, poverty and social unrest is also clear. Hence, the importance of planned economic contraction within democratic institution which can lead to an alternative paradigm has been analyzed.

One thing which is very clear from the review of the literature on economic degrowth is that, there is no readymade theory of degrowth. Apart from the theoretical analysis, most of the researcher in degrowth tries to find out practical examples of policies which can lead to economic degrowth.

Martinez-Alier (2013) has divided the strategies of degrowth in to three categories;

(1) Opposition (through organizing rallies, protests against ecologically dangerous activities),

(2) Alternative building (through creating new institutions),

(3) Reformism (through working within the existing institutions).

And, the scale of the strategies has been divided by him according to their feasibility of implementation as local and global. The review of the degrowth strategies carried out in chapter two can be analyzed accordingly.

The strategy developed by Nierling (2012) for recognition of unpaid work and developing a culture of unpaid work as a precondition for transition to a degrowth society comes under the third category and can be implemented at both local and global level. Alisa and Cattaneo's

(2013) idea of reallocating some services from market to home and work sharing within the home also comes under the third category of strategy and can be implemented at local level.

Kallis (2013) argued for reduction in working hour in paid sector and redistribution of paid work as strategies of degrowth which comes under the third category and can be implemented at all level. Bauhardt's (2014) idea for redistribution of paid and unpaid work among men and women is also a reform strategy within capitalism. Martinez-Alier (2009) argued for universal basic income as a reform in a capitalist economy to make the transition to degrowth socially sustainable. Alcott (2013) suggested for guaranteeing job to all citizens permanently as a political right without waiting for any institutional change. This policy can be implemented at all level.

One of the pillar of degrowth is reducing the level of consumption. The strategies suggested by Spangenberg (2014) like implementation of unconditional minimum income, progressive pricing, and innovation of more durable products can be carried with in the capitalism through reforms. But, policies like right to per capita environmental space, redistribution of resources for social sustainability need radical institutional changes.

Promotion of diversified organic farming, urban agriculture, and farmers market through change in the ownership of land and decision making power comes under second category of strategy where institutional change is imperative. Amate and Molina's (2013) policy of localization of food production and consumption also need institutional changes and can be implemented at local level. Creation of social capital through cohousing comes under second category as it is a creation of new institution at the local level.

4.2: Critique of Degrowth

The criticism against 'degrowth' arises mainly because of the ambiguity in its definition and the radical economic, political and social changes it proposes. Many critic doubts the political and social feasibility, economic or cost effectiveness of the degrowth proposal.

Some criticism arises due to the narrow definition of economic degrowth. If, economic degrowth is defined as GDP decline, it can be environmentally harmful, because GDP does not differentiate between clean and polluting economic activities (Bergh et al 2011). Hence a decline

in GDP can occur through a reduction in the clean economic activities (ibid.). Again the reduction in aggregate consumption and production ignores the composition of the consumption basket which is necessary from justice point of view (ibid.). The main criticism against degrowth is the absence of a single material, energy or value parameter to measure progress towards degrowth (ibid.).

Bergh (2011) argues that a reduction in GDP may reduce the CO_2 emission in the short run but in the long run a smaller GDP may decline the investment in research in cleaner technologies and renewable energy and hence the CO2 emission may increase. He is doubtful about even the short run reduction in emission incase decline in tales place due to less efficient production process. Hence he says that GDP degrowth is not a sufficient condition for reducing environmental pressure. The relation between GDP growth and environmental condition is very complex and hence the reduction in GDP fails to recognize the composition of cleaner and dirty activities (Bergh et al. 2011).

Bergh's (2011) criticism of consumption reduction as a degrowth strategy is based on the ambiguity in its measurement, empirical implementation, and environmental effectiveness. Reduction in consumption leads to increase in saving and resulting increase in investment or consumption through borrowing. Hence, Bergh (2011) prefers pricing instrument to give the consumer right information on goods and discourage environmentally harmful consumption.

Reduction in working hours will reduce consumption but the composition is not specified (Bergh et al. 2011). Hence its impact on environment is not clear. If the reduction in working hour takes place due to substitution of labour by capital then its environmental impact may be negative. Critique also raised question on the relation of work time reduction on happiness (ibid.).

Radical degrowth or radical changes in lifestyle by a small group of people may not lead to adoption by large section of the society. The lack of sufficient technical work in degrowth literature and the limited grass root movements raise question on the practical possibility of the changes that degrowth proposes (Martinez-Alier et al. 2010). Degrowth researchers fail to explain how such grassroot changes spread to larger areas (Bergh et al. 2011). Martinez-Alier (2013) suggested for clarification on the institutions which will play important role in the socio-ecological transformation at the macro level. The environmental effectiveness of alternative to

market economy proposed by degrowth thinkers is uncertain and also may lead to social unrest (Bergh et al. 2010). Instead of this Bergh (2010) argued in favor of adding new institutions to our economies for addressing the environmental crisis. He supports 'effective international climate agreement' with supportive price mechanism to bring change in the behavior of consumers and producers.

From a political and social feasibility point of view degrowth proposal is practically impossible and harder than environmental regulation or pricing policies (Bergh et al. 2011). The environmental effectiveness of international climate agreement and pricing mechanism cannot be rejected because we have not seen their proper implementation yet and because it takes time (ibid.).

One of the criticism degrowth scholars put against the earlier alternatives to economic growth which are based on technological fixes is the rebound effect. But, Bergh (2011) argued that degrowth strategies are also a failure in this regard. The best way to solve rebound problem according to Bergh (2011) is the effective price mechanism and international climate agreement.

As socio-environmental justice is the main objective of degrowth proposal Martinez-Alier (2013) suggested for more research on 'feminism, caste and class division, and non-violence'. Many relevant questions relating to degrowth remain unanswered. For example Martinez-Alier (2013) asked the feasibility of a degrowth policies adopted independently by a single nation. If degrowth policies are implemented, what will happen to the debt of the countries. The question of the kind of financial institutions needed for a degrowth transition needs further research.

4.3: Implication of economic degrowth on developing countries

One of the important limitation of the literature reviewed in the previous chapters is the lack of discussion on the implication of degrowth proposal on developing countries. The reason behind this lacuna is that most of the studies are done in the European and Latin American context. The policies proposed these studies according to the degrowth thinkers are appropriate for the rich countries only. The poor and developing countries of global south still need to grow by using their natural resources to reach a basic standard of living.

The Southern countries are not completely free or unaffected from the multidimensional crisis. In the globalized world of today every change in the industrialized developed countries must have certain impacts on Southern countries. The resource rich Southern countries export of cheap raw materials have been playing an important role in the disproportionate growth in the Northern countries.

Martinez-Alier (2009) argued that as the process of degrowth requires less production and consumption in rich countries, Southern countries will have lees destination for their exports of raw materials and manufactures goods. The supply of credit and donations from rich countries may decline as the process of degrowth sets in (Martinez-Alier et al. 2009). But, the positive point is that the problem faced by the Southern countries due to disproportionate pollution, waste exports by rich countries, problem of ecologically unequal exchange and the loss of nature and livelihood may reduce to great extent. And the Southern countries can use their resources for their own wellbeing.

Degrowth shares a lot of objective with the international environmental justice movements like the fulfillment of basic human needs such as food, education, health and housing for all in a sustainable manner. Accordingly, environmental justice movements of Southern countries which mainly work in resource extraction conflicts and ecological debt issues can be the counterpart of degrowth movement in Northern countries (Martinez-Alier et al. 2009). Martinez-Alier (2013) argued that the equality approach to justice in case of degrowth means resource and wealth redistribution not only within a country but also between Northern and Southern countries.

4.4: Conclusion

In spite of all the criticisms the proposal of degrowth cannot be rejected in its entirety. In a capitalist market system, questioning growth and rejecting its usefulness is not seen by many critics as politically, socially or economically feasible. Bergh (2011) argued for agrowth i.e. remaining indifference to the question of growth. He argues for implementing policies for changing the prices of products and services which reflects the environmental externalities and therefore changes behaviours. But, Kallis (2011) brought in the cultural and institutional critiques of growth and said that the society's fetishism towards growth is just a symptom of the capitalist market system based on the strong structural and cultural roots. Degrowth thinkers do

not reject the importance of price mechanism, but they understand the limitation of price mechanism in the context of the economic scarcity[23] developed by Roegen (1975). Degrowth proposal clearly emphasizes the urgency of the problem and the need to act now. Hence, further research in this area will definitely enrich the discourse on alternative to growth society.

[23] Roegen (1975) explained economic scarcity with the help of second law of Thermodynamics, which says that, the entropy of a close system continuously increases toward a maximum, i.e. the available energy is continuously transformed into unavailable energy until it disappears completely. So, the transfer of energy in to heat is nonreversible in nature.

References

Alcott, B. 2013. Should degrowth embrace the Job Guarantee? *Journal of Cleaner Production* 38(January): 56-60.

Alexander, S. 2012. Planned economic contraction: the emerging case for degrowth. *Environmental Politics* 21(3): 349-368.

Amate, J.I., and M.G. Molina, 2013. 'Sustainable De-growth' in Agriculture and Food: An Agro-ecological Perspective on Spain's Agri-food System (year 2000). *Journal of Cleaner Production* 38(January): 27–35.

Andreoni, V., and S. Galmarini, 2013. On the increase of social capital in degrowth economy. *Procedia- Social and behavioral sciences* 72(February): 64-72.

Bauhardt, C. 2014. Solutions to the crisis? The Green New Deal, Degrowth, and the Solidarity Economy: Alternatives to the capitalist growth economy from an ecofeminist economics perspective. *Ecological Econommics*102(June): 60-68.

Boillat, S., J.F. Gerber, and F.R. Funes-Monzote, 2012. What Economic Democracy for Degrowth? Some Comments on the Contribution of Socialist Models and Cuban Agroecology. *Futures* 44(6): 600-607.

Bonaiuti , M. 2012. Growth and democracy: Trade-offs and paradoxes. *Futures* 44(6): 524-534.

Bonaiuti , M. 2012. Degrowth: Tools for a Complex Analysis of the Multidimensional Crisis. *Capitalism Nature Socialism* 23(1): 30-50.

Borowy, I. 2013. Degrowth and Public Health in Cuba: Lessons from the Past? *Journal of Cleaner Production* 38(January):17-26.

Colombo, U. 2001. The Club of Rome and sustainable development. *Futures* 33(1): 7-11.

Daly, H.E. 1974. The Economics of the Steady State. *The American Economic Review* 64(2): 15-21.

D'Alissa, G., and C. Cattaneo, 2013. Household work and energy consumption: a degrowth perspective. Catalonia's case study. *Journal of Cleaner Production* 38(January): 71-79.

Deiru, M. 2012. Democracies with a future: Degrowth and democratic tradition. *Nature* 44(6): 553-561.

Demaria, F., F. Schneider, F. Sekulova, and J.M. Alier, 2013. What is Degrowth? From an Activist Slogan to a Social Movement. *Environmental Values* 22(2): 191-215.

Domenech, L., H. March, and D. Sauri, 2013. Degrowth initiatives in the urban water sector? A social multi-criteria evaluation of non-conventional water alternatives in Metropolitan Barcelona. *Journal of Cleaner Production* 38(January): 44-55.

Foster, J.B. 2011. Capitalism and degrowth: An Impossibility Theorem. *Monthly Review* 62(08).

Garcia, E. 2012. Degrowth, the past, the future, and the human nature. *Futures* 44(6): 546-552.

Garver, G. 2013. The Rule of Ecological Law: The Legal Complement to Degrowth Economics. *Sustainability* 5(1): 316-337.

Georgescu-Roegen, N. 1975. Energy and Economic Myths. *Southern Economic Journal* 41(3): 347-381.

Georgescu-Roegen, N. 1977. The Steady State and Ecological Salvation: A Thermodynamic Analysis. *BioScience* 27(4): 266-270

Griethuysen, P. 2012. Bona diagnosis, bona curatio: How property economics clarifies the degrowth debate. *Ecological Economics* 84(December): 262-269.

Haberl, H., M.F. Kowalski, F. Krausmann, J.M. Alier, and V. Winiwarter, 2011. A Socio-metabolic Transition towards Sustainability? Challenges for Another Great Transformatiom. *Sustainable Development* 19(1):1-14.

Heinsohn, G., and Steiger, O. 2000.The property theory of interest and money. In: Smithin,J. (Ed.), What is Money. Routledge, London, pp. 67–100.

Hirsch, Fred. 1976. Social Limits to Growth. *Routledge*.

Honneth, Axel. 1995. The Struggle for Recognition: the moral grammar of social conflicts. *Polity Press*.

Johanisova , N., and S.Wolf, 2012. Economic Democracy: A path for the future? *Futures* 44(6): 562-570.

Kaivo-oja, J., J. Vehmas, and J. Luukkanen, 2014. A Note: Degrowth Debate and New Scientific Analysis of Economic Growth. *Journal of Environmental Protection* 5(15): 1477-1481.

Kallis, G. 2013. Societal metabolism, working hours and degrowth: a comment on Sorman and Giampietro. *Journal of Cleaner Production* 38(January): 94-98.

Kallis, G. 2011. In Defence of Degrowth. *Ecological Economics* 70(5): 873-880.

Kallis, G., C. Kerschner, J.M. Alier, 2012. The Economics of Degrowth. *Ecological Economics* 84(December): 172-180.

Kallis, G., and H. March, 2014. Imaginaries of Hope: The Utopianism of Degrowth. *Annals of the Association of American Geographers* 105(2): 360-368.

Kerschner, C. 2010. Economic De-growth Vs. Steady-state Economy. *Journal of Cleaner Production* 18(6): 544-551.

Klitgaard, K.A., and L. Krall, 2012. Ecological economics, degrowth, and institutional change. *Ecological Economics* 84(December): 247-253.

Latouche, Serge. 2009. Farewell to Growth. *Polity Press*.

Latouche, S. 2006. The Globe Downshifted. *Le Monde diplomatique, English Edition* (January).

Lietaert, M. 2010. Cohousing's Relevance to Degrowth Theories. *Journal of Cleaner Production* 18(6): 576-580.

Lorek, S., and D. Fuchs, 2013. Strong sustainable consumption governance- pre condition for a degrowth path? *Journal of Cleaner Production* 38(January): 36-43.

Malthus, Thomas Robert. 1798. An Essay on the Principle of Population. *Dover Publication.*

Martínez-Alier, J. 2012. Environmental Justice and Economic Degrowth: An Alliance between

Two Movements. *Capitalism Nature Socialism* 23(1): 51-73.

Martinez-Alier, J. 2010. Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm. *Ecological Economics* 69(9): 1741-1747.

Martinea-Alier, J. 2009. Sociall Sustainable Economic Degrowth. *Development and Change* 40(6): 1099-1119.

Martinea-Alier, J. 2008. Languages of Valuation. *Economic and Political Weekly* 43(48): 28-32.

Meadows, Donella H. 1972. Limits to growth. *Signet*.

Muraca, B. Towards a fair degrowth-society: Justice and the right to a 'good life' beyond growth. *Futures* 44(6): 535-545.

Nierling, L. 2012. "This is a bit of the good life": Recognition of unpaid work from the perspective of degrowth. *Ecological Economics* 84(December): 240-46.

Nussbaum, Maratha C. 2000. Women and Human Development: The Capability Approach. *Cambridge University Press*.

Odum, H.T., and E.C. Odum, 2006. The Prosperous Way Down. *Energy* 31(1): 21-32.

Schmelzer, M. "Wachstumsrucknahme", "Postwachstum", "Entwachsen"? An introduction to Concepts and approaches of the German degrowth movement. http://www.degrowth.de/en/.

Sen, Amartya. 2009. The Idea of Justice. *Harvard University Press*.

Sekulova, F., G. Kallis, B.R. Labajos, and F. Schneider, 2013. Degrowth: from theory to practice. *Journal of Cleaner Production* 38(January): 1-6.

Shiva, Vandana. 2005. Earth Democracy: Justice, Sustainability and Peace. *Zed Books*.

Sorman, A.H., and M. Giampietro, 2013. The energetic metabolism of societies and the degrowth paradigm: analyzing biophysical constraints and realities. *Journal of Cleaner Production* 38(January): 80-93.

Spangenberg, J.H. 2014. Institutional change for strong sustainable consumption: sustainable consumption and the degrowth economy. *Sustainability: Science, Practice, & Policy* 10(1): 62-77.

Sweezy, P.M. 1989. Capitalism and the Environment. *Monthly Review* 41(2).

Tammilehto, O. 2012. On the Prospect of Preventing Global Climate Catastrophe due to Rapid Social Change. *Capitalism Nature Socialism* 23(1): 79-92.

Van den Berg, J.C.J.M. 2011. Environment Versus Growth — A Criticism of 'degrowth' and a Plea for 'a-growth'. *Ecological Economics* 70(5): 881-890.

Van Griethuysen, P. 2010. Why Are We Growth-addicted? The Hard Way Towards Degrowth in the Involutionary Western Development Path. *Journal of Cleaner Production* 18 (6): 590–595.

Victor, P.A. 2008. Managing Without Growth: Slower by Design, Not Disaster. *Edward Elgar Publishing Limitted.*