

Review Article

World System Theory in the Climate Change Prospect

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Abstract

A central finding of development discourses on the impacts of global climate change reflects unequal power dynamics that shape patterns of social mobility, and access to social, political, and economic resources across the world. An understanding of inequality becomes one of the most powerful tools that can be used to study global climate change and its impact. It is widely documented that the effects of global climate change is not be equally distributed around the world. Though through employing systematic review method, this article intend to critically review, analyse and synthesize the central aspects of world system theory with the climate change prospect, and its relevance in terms multidisciplinary research, development intervention policies design, and execution. The study finding reveal that these inequalities exist between developed and developing nation will be further exacerbated by the unequal burdens inflicted by climate-related disasters and limited disaster response capacities. One important predicted outcome of climate change in the third world countries is recurrent occurrences of environmental hazards (desertification, drought, food insecurity, poverty and loss of livelihood, unemployment, and soon. Indeed, while bringing new insight and understanding into the development discourses, and social science research will have immense impact for future climate change mitigation, and adaptation action.

Keywords

World System, Climate Change, Development Discourses, Power Hierarchy, Keynesian, Development Prospect

1. Introduction

Wallerstein 1976 argues for a certain concept of a world system to describe the origins, and initial workings of a world system. World system as a social system has boundaries, structures, member groups, rule of legitimization, and has coherence [9]. It comprise conflicting forces that holds it together by tension apart as each of the groups seeks eternally to remold it to its merit. It has the characteristics of an organism, in that it has a life span over which its characteristics change in some respects and remain stable in others. In terms pf the internal logic of its function one can define the world system structure as as strong or week being at different times. Before,

the modern era the economies were importantly and unstable structure that tended either to be converted into empires or dis-integrated. This peculiarity of the modern world system that the world economy have survived for 500 years, and yet has not come to be transformed into a world empire-a peculiarity that is the secret of its strength. This peculiarity has the political side of the form of economic organization called capitalism. Indeed capitalism has been able to flourish precisely because the world economy has had within its bounds not one but a multiplicity of political system [9].

The historical reasons why the European world economy

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came into existence in the 16th C, and has resisted attempts to transform it into an empire have been expounded at length. However be noted that the size of a world economy is a function of the state technology, and in particular of the possibilities of transport, and communication within its bound. Since this is a constantly changing phenomenon, not always for the better, the boundaries of a world economy are ever-fluid. Defining a world system as one in which there is an extensive division of labour, this division not merely functional that is, occupational - but geographical. This is to say, the range of economic tasks not evenly distributed throughout the world system. In part the consequences ecological considerations to be sure, but for the most part, it is a function of the social organization of the work, one which magnifies, and legitimize the ability of some groups within the system to exploit the resource of others to receive a larger share of the surplus as climate change more manifested in the third world countries. Extreme weather events, rising temperatures, and changing rainfall patterns will become more frequent which posing a particular threat to most developing countries [26]. Where social, economic, and political institutions are so fragile, particularly in Africa will deepen and erode the gains made in development in the last several decades. Among these serious climate concern trends of rising climate change impact in particular the devastating impact it has on periphery nations economies, which has very low capacity to adapt to the adverse effect of climate change [26, 30].

Indeed, the impact of climate change has significant impact in the world economy, and the political structure which tends to link culture with spatial location. The reason is that in a world economy, the first point of political pressure available to groups is the local (National) state structure towards climate change mitigation and adaptation actions. Cultural homogenization tends to serve the interests of the key groups, and the pressures build up on create cultural-national identities. This particularly the case in the advantaged areas of the world economy - what we have called the core state in the world system. Along with such state of condition, the creation of strong state machinery coupled with a national culture, phenomena often refereed as integration, which serves both as a mechanism to protect disparities that arises within the world system as an ideological mask, and justifications ideological for the maintenance of these disparities to the effects of climate change induced disasters across the glob.

The mark of the modern world is the imagination of its profiteers, and the counter-assertiveness of the oppressed. Exploitation, and the refusal to accept exploitation as either inevitable or just constitute the continuity antinomy of the modern era, joined together in a dialectic that was far from reaching its climax in the 20th century [9]. This mainly manifested through the effect of climate change across the world. Indeed, it already affecting vulnerabilities, resilience, and social inequalities globally, and placing lives and livelihood system at risk [26]. FAO 2016 report there is a consensus in the literature that climate change will far-reaching consequences for social

development goals and economic development more broadly, this includes poverty reduction, food and nutrition security, economic growth, gender equality, social equity, and health [5]. Further, the cause and consequences of climate change are linked to global patterns of inequality and social justice. Multiple literature indicates that the impact of climate change are not borne equally, demographic and socio-economic factors, such as gender, age, livelihood strategies and poverty shape levels of exposure to climate change effects, vulnerability and resilience [26].

This article review paper aim to describe, analysis and synthesis the relevance of world system theory within the development prospect of contemporary world to deal with the effect of climate change. This has been undertaken through employing systematic review method to identify, discuss, and analyse relevant studies and literature in the field with the aim to bring new knowledge insight and understanding to the climate change mitigation and adaptation future action for policy makers, practitioners, researchers and public and private development entities.

2. Materials and Methods

2.1. Systematic Literature Review

For this review article systematic review methods have been used to identify, collate, and systematically summarize existing literature (articles, books, research.. etc) on the topic. The goals of the literature review depend on the type of literature review to answer specified as well as concentrated research questions. This is way systematic review method that can reduce the bias in literature analysis. For this article systematic literature review have been employed to identify, evaluate as well and summarize relevant studies about development discourses to show a synthesis of evidence on the current debate on world system theory. Systematic reviews have a clearly stated purpose, questions, a defined research approach, and an appraisal of the articles [12]. By following an explicit research methodology, the limitation of the traditional review approach shall be overcome [7]. This limitation of the traditional approach may include, biases of philosophical mix-ups through heterogeneous sampling [25], and issues related to quality assessment [7]. Therefore, the following steps have been taken to avoid the above-mentioned limitation.

Phase 1: Mapping the study field through a scoping review method: To map out the study field conducted a systemic literature review to the scope of the amount of relevant material, by identifying the most often cited texts and following up on the references therein. This gave the first impression of existing knowledge and knowledge gaps under this topic. Though performed a systematic search with web of science, SCOPUS, and PubMed using the following key words of the article (theories of development discourses, world system theory, characteristic of world development, dimension of development, global climate change). As well reviewed the grey literature

using the same search terms in Google scholars to ensure that all relevant article were included.

Phase 2: Comprehensive search: Under phase two this study enter into the systematic literature review process through using GOOGLE SCHOLAR in the keywords, titles, abstract along with other combinations of key terms and themes of the study, including world system theory, and its contemporary significance to climate adaptation and mitigation strategies, approaches, and policy frameworks. This enables to presentation comprehensive background of the literature within the topic to highlight new research streams by identifying gaps or recognizing inconsistencies for refining, focusing, and shaping the direction for further research.

Phase 3: Quality assessment: The search was subsequently limited to specific publications related to the world system theory, climate change, and development discourses.

Selection Criteria: Throughout the study process, the researchers initially screened potentially relevant articles have been done based on the the title, and abstract to determine if they meet the inclusion criteria for full-text review and analysis.

Phase 4: Data extraction: The articles were analyzed along with the nature of the article (empirical or conceptual), analysis method, theoretical perspective, findings or results, definitions or propositions, and quality-related comments have been summarized. To identify the main categories of this article review paper, The strategy was first to obtain a broad understanding of these identified articles, list the keywords of all of the selected articles, and summarize additional keywords by reviewing abstracts, introductions, and findings. Through grouping the keywords of the study enabled to identify first-order concepts, then continued by grouping these keywords into categories.

2.2. Data Interpretation and Analysis

Following data extraction study finding interpretation and analysis from a systematic review is the critical and last step in the review process significantly influence in synthesizing the result of the study.

Phase 5: Synthesis and Data Analysis of the Study Finding: Subsequent to data extraction, the article divided into three main categories which are based on the building block of world system theory.

Following data extraction, the article divided into three categories based on the building block of world system theory then sub-divided them based on it application to development prospect towards climate action, and social research. Afterward critical comparsion of those studies finds have been made for looking their similar metrics.

Phase 6: Write-up and diffusion: The next section addresses the synthesis of the analysis of the articles as a result and discussion section of the article.

3. Results

3.1. World System Theory

World-system theory is a macro-sociological perspective that seeks to explain the dynamics of the "capitalist world economy" as a "total social system". Its first major articulation, and classic example of this approach, is associated with Immanuel Wallerstein, who in 1974 published what is regarded as, *The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis*. In 1976 Wallerstein published *The Modern World System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. This is Wallerstein's landmark contribution to sociological and historical thought and it triggered numerous reactions and inspired many others to build on his ideas. Because of the main concepts and intellectual building blocks of world-system theory, it brought significant impact and it could be more reception to the third world countries.

The theory central argument which stand for to the intellectual world into the field of historical sociology and economic history of the world, also its focus on unequal distribution of development opportunities across nations of the glob has been embraced by both social theorist and sustainable development practitioners. The amalgamation of these makes world system as social, economic, political, climate and intellectual endeavor. Wallerstein's WSA theoretical assumption and approach considered as one of praxis that clearly shows how theory and practices are closely interrelated. The theory intellectual activities intent relies to create common ground of knowledge that uncover hidden world structures to allow theorist and practitioners to analysis and act upon the world concerns and its recurrent changes. Even though world system research largely qualitative, despite the fact that initially Wallerstein turn away the distinction exist between nomothetic and idographic methodologies to understand and analyze the world in which human society established socio-economic, political and environmental boundaries. Still yet for Wallerstein, there is also an objective world that can be methodologically quantitative to understand, despite no mater how long it can be exist it have been a product of historical events that were occurred across the world. But for the most part, his methods are associated with history and with interpretive sociology. His work is methodologically somewhere in between Marx and Weber, both of whom were important inspirations for his work.

Wallerstein's work developed at a time when the dominant approach to understanding development, modernization theory, was under attack from many fronts, and he followed suit. He aimed at achieving "a clear conceptual break with theories of 'modernization' and thus provide a new theoretical paradigm to guide investigations of the emergence and development of capitalism, industrialism, and national states" [28]. The criticisms of modernization theory, include (1) the reification of the nation-state as the sole unit of analysis, (2) the

assumption that all countries can follow only a single path of evolutionary development, (3) disregard of the world-historical development of transnational structures that constrain local and national development, (4) explaining in terms of a historical ideal type of "tradition" versus "modernity", which are elaborated and applied to national cases. In reacting to the critics of modernization theory, Wallerstein outlined a research agenda with five major subjects such as; the functioning of the capitalist world economy as a system, the how and why of its origins, its relations with noncapitalist structures in previous centuries, comparative study of alternative modes of production, and the ongoing transition to socialism [9, 33].

3.1.1. The Idea of World System

For Wallerstein, "a world-system is a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence. Its comprises the conflicting forces that hold it together by tension and tear it apart as each group seeks eternally to remold it to its advantage. It has the characteristics of an organism, in that it has a lifespan over which its characteristics change in some respects and remain stable in others... Life within it is largely self-contained, and the dynamics of its development are largely internal" [9]. A world system is what Wallerstein terms a "world economy", integrated through the market rather than a political center in which two or more regions are interdependent concerning necessities like food, fuel, and protection, and two or more polities compete for domination without the emergence of one single center forever (Goldfrank, 2000).

In his first definition, Wallerstein's 1976 said that a world system is a "multicultural territorial division of labor in which the production and exchange of basic goods and raw materials is necessary for the everyday life of its inhabitants." This division of labor refers to the forces and relations of production of the world economy as a whole and it leads to the existence of two interdependent regions: core and periphery. These are geographically and culturally different, one focusing on labor-intensive, and the other on capital-intensive production [33]. The core-periphery relationship is structural. Semi-peripheral states act as a buffer zone between the core and periphery and have a mix of the kinds of activities and institutions that exist in them [28].

3.1.2. Power Hierarchy Between Core and Periphery

Among the most important structures of the current world system is a power hierarchy between core and periphery, in which powerful and wealthy "core" societies dominate and exploit weak and poor peripheral societies. Technology is a central factor in the positioning of a region in the core or the periphery. Advanced or developed countries are at the core, and the less developed are at the periphery. Peripheral countries are structurally constrained to experience a kind of development that reproduces their subordinate status [3, 9]. The differential strength of the multiple states within the system is

crucial to maintaining the system as a whole because strong states reinforce and increase the differential flow of surplus to the core zone [28]. This is what Wallerstein called an unequal exchange, the systematic transfer of surplus from semi-proletarian sectors in the periphery to the high-technology, industrialized core [28].

This leads to a process of capital accumulation at a global scale and necessarily involves the appropriation and transformation of peripheral surplus. On the political side of the world system, a few concepts are highlighted. For Wallerstein, nation-states are variables, elements within the system. States are used by class forces to pursue their interest, in the case of core countries. Imperialism refers to the domination of weak peripheral regions by strong core states. Hegemony refers to the existence of one core state temporarily outstripping the rest. Hegemonic powers maintain a stable balance of power and enforce free trade as long as it is to their advantage. However, hegemony is temporary due to class struggles and the diffusion of technical advantages. Finally, there is a global class struggle. The current world economy is characterized by regular cyclical rhythms, which provide the basis of Wallerstein's periodization of modern history. After our current stage, Wallerstein envisions the emergence of a socialist world government, which is the only alternative world system that could maintain a high level of productivity and change the distribution, by integrating the levels of political and economic decision-making.

3.1.3. Building Block of the Theory

Wallerstein 1976 world system theory drawn up on three basic intellectual building block. This associated with Wallerstein's own life experience and exposure to various issues throughout his life span, as well as other contending theories. Wallerstein also learned to focus on geo-ecological regions as unit of analysis for his theory, attention were given to rural history, and reliance on empirical materials from Braudel's, from Karl Marx, Wallerstein learned that, (1) the fundamental reality exist if social conflict among materially based on human group, (2) the concern with a relevant of totality, (3) the transitory nature of social forms, and theories about them, (4) The centrality of the economic accumulation process and competitive class struggles that result from it, and (5) Dialectical sense of motion through conflict, and contradiction. In fact world system theory in many ways an adaptation of dependency theory. Even though, Wallerstein world system theory draws heavily from dependency theory, and Neo-Marxist explanation of development processes which is popular in the developing world were the core for the emergency of world system theory.

3.1.4. Themes and Assumption

The key aspect that makes world system theory emerged with its assumption vary from the capitalist perspective, its broader view and unit of analysis, and emphasis it have given

around the world since from early of the 1960s. The basic assumption of world system theory, consider the most developing nations has new circumstance attempt to upraise their living standards, as well to improve their socio-economic and climate conditions. This situation of the third world nations, were related to the fact that the international monetary or financial and trading system emerge to have create more flexible character [9]. In which national government actions were less and less influential. This new international economic circumstance made possible for were new activities in the capitalist world economy would could not be explained within the confines of the dependency and capitalist perspectives. The new features have been characterized by mainly with the following aspects: East Asia (Japan, Taiwan, South Korea, Hong Kong, and Singapore) these achieved remarkable economic growth as compared to other third world countries.

It have been become more difficult to portray the Ear Asia socio-economic growth as “manufacturing imperialism”, rather there was a widespread political animosity and crisis between and among the socialist countries of the world. The failure of cultural and economic revolution and the gradual opening of socialist ideologies in developing countries and capitalist investment signaled the decline of revolutionary Marxism perspective. Most significantly the crisis in North America capitalism, including the Vietnam war, the Watergate crisis, and the oil embargo of 1975, as well stagnation and high inflation in the late 1970s and the rise sentiment of protectionism, unprecedented government deficit and widening trade gap in the 1980s all demise American hegemony in the capitalist world economy. These key conception created the condition for the rise and development of world system theory. This school of thought had genesis ate Braudel center study of economics, historical systems, and civilization at state university of New York at Binghamton. The theory having it origin in sociology extended it impact to anthropology, history, political science and urban development planning. Wallerstein and his followers recognized that there are worldwide conditions that operate as determinant forces especially for the third world countries, and the nation level of analysis is no longer the only useful category for studying development conditions, particular to the development nation states. According to Wallerstein’s, these factors which had significant impact to the internal development of peripheral regions were the new global systems of communications, trade mechanisms, financial system, transfer of knowledge, and military links. As well it created their own dynamic at international level and interacting elements of internal aspect of the third world countries.

Main central argument and assumption of Wallerstein’s world system theory based on the link it has between social sciences. This school recognizes that more emphasis usually given to the individual development of each disciplines instead of interaction exist among them and how these interactions affect in the real term of the national conditions of a given society. Instead of addressing the analysis of each variables of social system the approaches followed by classical

political economic perspective is based on the conditions of the capitalist system driven during the industrial resolution. However, today this is not the condition considering the importance of economic role of transnational corporations, international climate policy, the interdependence that affect poor nations government development strategies and actions, and the role of speculative climate investment.

3.2. The Idea of Development

As a process of social and economic development inherent to a society right from its inception. However, the emergence of the concept of development is a recent one dating back to early 19th C. The post second world war period with decolonization witnessed the emergency of and dominance of the concept of development in academic literature. Even though, later on it was felt the concept of development cannot be thought of a one dimensional way having economic implication. It often affect the social, cultural and political dimension of development in human society. Since then development became and focus on improvement in quality of life and condition of living and sustainable well-bing of the environment.

Although development become a constant concern of government, policy makers, researchers, economists and practitioners, and has touched the lives of more communities than ever before. Yet there has been little agreement on what development constitutes, how its is best measured and achieved. Among the several reasons for the lack of consistent agreement among scholars is that the dissatisfaction with the pace and character of economic and social changes installed a desire to redefine the aim and measures of development. UNDP [31] defined development as the process of economic and social transformation and their interaction in the society. According to Thomas [1] describe development as a vision of how desirable society should be. Development as a historical process, social change takes place over long period of time due to inevitable process to the result of progress agricultural to industrial society. The development of human societies accompanied with varied character and goon through multiple different stages. In the contemporary context of highly uneven worlds associated with the impact of climate change a better life for most means, essentially meeting basic needs and necessities, beyound these needs, basic to human survival development become subject to the materials and cultural interest of different society [23, 27]. Still yet there is no mutually agreed definition towards what constitute development. But Rath 2022 the most comprehensive one as development described as:

Continuous process: - The process of development continues from the moment of in character. Evolutionary development takes its natural course, time and in not very spectacular in-inception of the society [20]. The society always marches forward. Sometimes the process of development is faster and under some situations it slows down. However, it witnesses no complete halting point. It is ongoing in nature.

Pattern: - Development occurs in an orderly manner and follows a certain sequence. Thus, primitive, medieval and modern are the different phases of development of the society [20]. The society cannot skip one stage to reach at the other in the process of development. The pattern is always maintained.

Direction: - It runs as corollary from the above said feature that the process of development follows a definite direction [20]. This direction is always forward and never backward. August Comte's "Law of Three Stages", Herbert Spencer's proposition that the society moves from a simple to the complex one, Ferdinand Tönnies's idea that the society transits from community to association, Emile Durkheim's proposition that the society makes a shift from mechanical to organic solidarity and Karl Marx's idea that the society progresses from a class to a class-less society amply justify the directionality involved in the process of development. It also impresses that in the process of development, the society progresses towards maturity.

3.2.1. Universal and Multidimensional Nature of Development

The concern of climate change currently a global undeniable urgent reality. It is not possible to promote sustainable development without climate assertive action and innovation in the fight against its impact on human society nor can respond without considering the multidimensional aspects of development. Development is a common process witnessed by every society however primitive or modern it is ever nature. In the long run the impacts of development become visible [6]. Revolutionary development is triggered by some factors like education, migration in large scale, and introduction of policies. It marked in a quick span and is vividly visible in nature. For example, transition of a society from pre-modern to modern is evolutionary development, but transition of a society from monarchy to democracy due to some revolution is revolutionary in nature. Even the developments taking in the post globalization period can be said to be revolutionary.

The conventional notion of development always insisted upon the uni-dimensionality of the concept of development focusing on economic growth. However, later on it was felt economic growth is a parameter of development, but not the sole or whole of it. At this moment the social scientists and development practitioners felt that development has to be multidimensional touching various aspects of the society. So that it can become better yielding in nature. It should not confine itself to the economic dimension, but should have its political, cultural, environmental, and social dimensions too. Its political dimension is expressed through the process of democratization, distributive justice; increased consciousness for human rights, equity, and liberty. The cultural dimension of development is manifested through the growth of secular culture, and increasing consumerism. Whereas the environmental aspect of development much more deal with the concern of climate change. Finally, the social dimensions of development include

increased participation of people in societal affairs, development of self reliance, better human development and environmental sustainability. Even though the interconnection between development strategies and strategies to climate change mitigation and adaption generate mutual benefits to the human society. The global action to fight the concerns of climate change and development have evolved long-period of time in parallel path. In globalized society and interdependent world the challenge of development are complex and multi-dimensional, and the worsening of climate change and environmental risks needs the promotion of sustainable development.

3.2.2. Development Insists upon Adaptability and Irreversible

To deal with the complementary human society concerns to the process of development a way insists up on looking forward instead of stagnation on certain points. There may be temporary stalemates but once the society witnesses the process of development in some form or the other time and space cannot arrest it. Right from the beginning of the society development process is initiated the rich and the poor societies as of the core and periphery described under world system theory, the most developed and under developed societies too experience it. In some societies it is faster while in some societies it is slow. In some societies the yields of development are more remarkable than other societies. So, the process is universal, but the outcome is not uniform across each society.

Development as process is driven by human needs. Human needs change with the changing time and situations. The process of development demands the existing institutions to change and adapt to the upcoming demands to fulfill the emerging needs of the individuals. For example: with the process of industrialization brought significant impact on the well-being of environment and ecosystem which requires adaptive action.

3.2.3. Dimensions of Development

The concept of development always have multi dimensional nature. The four key important dimensions of development, includes economic, human, sustainable and territorial dimensions. Development as a multi-dimensional process involves major change in communities social structures, peoples attitudes, institutions, economic growth, reduction of social inequality and eradication of poverty and hungers. However, Development seen as, whether economic, political or social, to imply both increases in output and changes in the technical and institutional arrangement by which it is produced [19]. In other words and more importantly, development is a multi-dimensional concept and in spite of the various conceptions, development is basically about the process of changes which lies around the spheres of societal life [21, 22]. Hence, development can be conceived as a conscious acceleration of economic, political, social, educational and technological growth of a society through effecting consistent, progressive and enduring policies of the government.

Furthermore, Akanle and Abayomi 2013 viewed development from the perspective of those facing developmental issues [22]. They claimed that any issue that negatively impacts the quality of life and human fulfilment is a development threat and manifestation of an underdevelopment and people will do anything to avoid it. This involves the reorganization and reorientation of the whole social systems and institutions in such a way that the social structures become development compliant [22]. Therefore, it can be described as that social, economic, political, religious, the educational progress that is achieved not only after a society defines its needs, but also creates institutions in achieving those needs.

4. Discussion

4.1. World System Theory and Keynesian Macro-economics

A mechanistic and sometimes dogmatic interpretation of capitalism has kept world systems theory from attaining practical relevance for social movements that try to combine the democratic management of society with efficiency, including the market. By using Keynesian macroeconomics as a basis and integrating it into a long-term Annales-type historical perspective, the latter inspired by the work of Karl Marx, major aspects of these theoretical shortcomings can be addressed. Profit depends on rising mass incomes in contrast to rent which does not. Capitalism is, therefore, the unintended consequence of the success of the lower strata. Capitalism as a type of happy accident is expansive but can be transferred to other societies only if the empowerment of labor is successful. In the current process of globalization, there remain various risks whereby labor becomes dis-empowered, both in developing and developed capitalist economies. In addition, underdevelopment hits back and dis-empowers labor in the most technically developed countries. As such, a global strategy of labor is required which may, nonetheless, be implemented locally, as exchange rate adjustments protect the socially successful cases from destruction through a race to the bottom. The necessity of such a strategy is based on policies currently being implemented in an attempt to re-launch growth and overcome crises that are characterized by a narrow and empirically unfounded dogmatism. Such a mobilization will not, however, threaten the income and employment position of workers in the North, via the demands and higher competitiveness of workers from the South, as differences in labor costs are mediated through the exchange rate [8].

4.2. Relevant in the Development Prospect

Wallerstein's world system analysis (WSA) has profoundly influenced research and theories on the global political economy and the environment [11]. Wallerstein insight on the modern world system become vital in helping to achieve an

accurate understanding of ongoing processes of environmental or ecological degradation and uneven consequences from the global to the local nations. Indeed any attempt of either of theory testing or empirical verification utilize a sample from single year of data with only a few nation-states would be wholly inadequate [15]. For the last several decades Wallerstein's world system analysis have transformed the knowledge and understanding related with the concern of climate change induced disasters that have been occurred around different parts of the world from an event of concentrated in time and space to social occasion [15, 29]. This shift in the conceptualization of disasters is not arbitrary academic distinction, rather it is genuine methodological and theoretical effect [15] to deal with the effects of climate change induced disasters.

This helps to understand of ongoing process of climate change and it's uneven consequences from the global to the local communities. With the prospect of world system analysis to respond the challenges of climate change induced disasters, including socio-economic inequalities that exists between the core and peripheral regions. In the contemporary world system analysis helps to imagine better social change and possibilities for future world. While analyzing Wallerstein's world system analysis with climate change further linked through the concepts of uneven environmental impacts and resources extraction [13]. The theory that have been Wallerstein's [9] described posit that the core regions or capitalist countries through globalization and modernization exploit semi-periphery and peripheral regions leads to immense environmental degradation. This brought disproportionate impact of climate change induced disasters on these regions. Further the theory also highlights the core regions with their focus on economic growth and national resources extraction often exert influence over less developed peripheral regions [13]. This significantly leads recurrent occurrences of multiple environmental hazards due to the effects of unsustainable use and management of scarce natural resources. The uneven impacts of climate change reported by Robert and Girmes [13] while core regions are historically as well as currently are emitters of GHGs that intensifies multiple climate change induced disasters and related consequences, including rising of sea levels, extreme weather events, and resources scarcity are felt most acutely in the semi-periphery and peripheral regions of the world. This mainly manifested through unequal power dynamics within the world system that perpetuate cycle of exploration and dependency.

Therefore, the ideas of Wallerstein's helps researchers, and policy makers to evaluate prospect for responding the challenges of social, economic and environmental inequalities, and climate change in the contemporary world system. As well an under-examined aspect of global warming and climate change is the geographic separation exist between nations that generate greenhouse gases, and the people who are most likely to be hurt by global climate change. Wallerstein's world system analysis enable to explain how climate change both as a

cause and consequences of existing social and regional inequalities, as well as how geopolitical structures in the global economy ensure the benefits and costs of burning fossil fuels are not shared equally [17]. Upheaval questions of who will take the responsibilities, and pay for the mitigation and adaptation efforts needed as the climate crisis worsens across the world. Particularity in countries that bear little responsibility for the global greenhouse gas emissions. One of the most recent climate change mitigation and adaptation action employed is climate finance, which is a complex set of mechanism intended to address this concerns. Wallerstein's world system theory has long understood international development assistance as a tools that reproduces spatial dependency between nation state around the globe [4] To understand patterns of the climate finance distribution, it is the valuable step back to understand how these flows are informed by relations of dependency developed over centuries of colonialism, capitalist expansion, and decolonization under conditions of dependent capitalism. These are forces which also created the conditions for climate change. In spite of climate finance aid system have been established at global level, most of severely affected third world countries unable to cope up to the effect of climate change.

4.3. Interconnection of the World to the Effect of Climate Change

Development that have been attained by human society for centuries seems to have ultimately led to the emergency of state organizations, despite it is not just that climate change influenced human kinds and their civilization, but also that people respond with new and advanced mode of productions and instruments of social cooperation [2, 32] that are still in some sense exists within today's human society. The effects of climate change further expected to exacerbates the difference and inequalities exists between the core regions and peripheral countries welfare system as mitigation and adaptation strategies, and have significant consequences of increasing migratory tendency [32]. The current global climate change further increases the challenges to all earth inhabitants, but the impact importantly vary substantially from core regions to periphery.

The impact of climate change affect the world without distinction of countries or regions border. Dubois et al [24] noted that the impact of climate change already threatening the resilience and cope up capacity of societies and communities worldwide and intensified existing vulnerabilities, particularly communities livelihoods rely on natural resources and ecosystem in which the world connect together. In fact social development, specifically social analysis is important to integrate into climate change intervention design, and program implementation with a broader perspective and methods to understand the dynamic processes of vulnerability and resilience in response to climate change worldwide. Integrating the social and economic development perspective into climate change adaptation and mitigation action can improve climate

response measures while promoting social development goals [10]. With the lenses of social analysis with a due emphasis on equity, social justice, and engagement, including among countries globally specifically more marginalized and vulnerable social groups such as indigenous people and socio-economically disadvantage groups highly vulnerable to the effects of climate change. Both demographic and socio-economic factors affect vulnerability to the effect of climate change, this is widely asserted that the poor countries will be hardest hit by the impact of climate change. Especially those whose livelihoods are most heavily reliant on natural resources. Despite, vulnerability is a complex and dynamic concepts, it depends on many world countries contextual factors and system components, such as environmental, social economic, cultural and institutional factors and livelihood strategies. Typically, more vulnerable third world countries of the periphery are those with fewer asset and less access to means of coping with and adapting to the climate risks [5]. Further that indigenous people and minority groups of the periphery region tend to live in area were among the worst affected by climate change across the world, yet they have been broadly excluded from climate action discussions which mainly undertaken by core or socio-economically advanced countries. Many of these indigenous groups as described by Wallerstein's [9] world system theory the periphery regions are primarily uses natural resources in which their livelihoods depend on ecosystems based on forest and waters resources. And those regions are considered as repositories of traditional ecological knowledge.

To overcome this concerns engendered by global climate change risks the questions of sustainable international cooperation and collaboration need to be further strengthen through policy revision as well as mitigation and adaptation measures. This can be attained through with a due consideration of individual, social groups, firms, and entire communities actions that leads and intensifies global environmental changes. While Paterson [16] noted that the concern of equity and justices need to be widely recognized in international climate negotiations and cooperation as a central strategy to effectively respond to the effects of climate change. Paterson [16] further noted that most contemporary climate commentators regards to the notions of climate equity and justices to be central to the successful formulation of climate change policies, and mitigation and adaptation strategies. Predominantly suggest that a position that explicitly aim to reduce existing international inequalities through North-South transfer a disproportionate burden sharing by the North is most likely to satisfy and has clear implications about the issues of climate justices. Therefore, the perception of climate justices need to be an integral part of the climate change policy design and strategies which seeks to alter human interference on atmosphere processes without further aggravate difference in human welfare among and between the core and peripheral countries.

4.3.1. Mitigation and Adaptation Action

According to Wallerstein world system theory analysis, the

world structured through tri-modal system comprised the core, Semi-periphery, and periphery [9]. Most of the climate change mitigation and adaptation action, including policy, strategy, and intervention programs flow from the core to the periphery regions. These action, specifically financial aid provided in the form of climate finance mechanism aim to support the poorer countries - periphery region for cutting emissions and adapting to a climate change. Despite, these support provided through bilateral and multilateral initiatives as well as several carbon funds and development programmes are insufficient alone to address the concern of climate change.

4.3.2. Socio-economic and Political Integration of Core - Periphery Regions

The socio-economic and environmental links that exist among and between the core, semi-periphery, and periphery region of the world system has been well investigated, but the relationship remains shrouded in ambiguity because context, variability temperature patterns, climate adaptive technological evolution among other factors play a significant role. This variations mainly evolves due to significant social, economic, and political development gap exist across the world countries. There are varied perspectives on the effect of climate change on economic growth of the core, and periphery nations, and the balance of evidence indicates that economic growth will continue to decline in periphery nation, specifically in Africa [26]. Indeed in today's world where climate change is indispensably a global challenges and also impacting not only the natural resources, but also the economic and societies [31]. Government across the globe continued to concerns themselves specially with the domestic actions and strategies aimed at mitigating and adapting climate change [14]. According to Amusan and Olutola 2016 report these government moves at least serve to complement the ongoing international efforts at finding workable solution to climate change as a global common. Despite interfacing climate change with local governance has particularly remained a crucial challenge confronting most of the peripheral regions given their relative high vulnerability to the effects of climate change induced disasters, as well their low and limited mitigation and adaptive capacity and resilience strategies to respond and deal with it. Yet environmental degradation continued to poses climate change induced disasters for peoples and states of the peripheral countries. Political actions directed towards environmental regulations is obviously related to the increasing scale and intensity of ecological degradation. Even though it does not fully explained through the rises of international climate change mitigation and adaptation regime's and multiple climate action movements that have been takes place in several times. These movements and increments of environmental treaties does not solely become an effective strategies to deal with the climate concerns rather paradigm shift need to devised to attain and bring sustainable solution across the globe.

4.3.3. Environmental Integration

The intensity and frequency of rising extreme weather events that has been occurring around the world has significant impact on the natural world, this includes reduce in biodiversity, decline of scarce natural resources [2]. The interdependence of climate, biodiversity, ecosystem, and human societies of core and periphery nations has far-reaching diverse impact on the well-being of the global environment.

4.4. International Treaties, Protocol and Cooperation on Climate Change

To deal with the concern of climate change multiple international Treaties, agreement, protocol, and cooperation have been developed and established since from the 1970. The concern of climate change by its vary nature is a global challenges, that can only met through coordinated effort of all nation-states of core, semi-periphery and peripheral regions. Arriving at an effective and equitable international agreement that can achieve the necessary emissions reduction is the one of the greatest effort to institutionalize international cooperation. And, such agreement should be based on the principles of environmental integrity between the core and peripheral regions with cost effectiveness and equity. Despite, the atmosphere and climate change illustrates the need for, but as well the difficulties of negotiating institutionalized cooperation to avert the tragedy of the global common [18]. There are several international Treaties that have been takes place by international communities to address and deal with global warming and climate change since from the 1970. Among these international treaties and agreement, includes united nation conference on human environment (Stockholm, 1972), Vienn Conference for protection of ozone layer (1985), Montreal protocol on substance that deplete the ozone layer (1987), united nation framework convention on climate change (1992), Koyoto protocol (1997), Copenhagen Accord (2009), Paris Agreement (2015), Kigali Amendment to the Montreal protocol (2016), Madrid Agreement (2019), and Glasgow climate fact (2021).

5. Conclusions

Even though world system theory has its limitations or drawbacks, it is also helpful to critically understand through the lens of today's global concerns of climate change, In which core, semi, and periphery regions are interconnected to tackle their common problems of climate change crisis, and its diverse impact. Climate change in which the world exposed today, and experienced has its historical roots, from the period of colonization, and post-colonial period, to the recent globalization network. Is the principle that the benefit from activities that cause climate change and the burden of climate change impact need to be fairly distributed? Countries that become wealthy through unrestricted carbon emissions have the greatest responsibility not only to stop warming the planet but also

to help other countries adapt to climate change and develop economically with non-polluting technologies. Though the principles of climate justice in the global environmental decision-making process, should be in supporting centering populations that are least responsible for and vulnerable to the climate crisis as decision makers in global, regional, as well in national plans to address this crisis.

Indeed, during the era of colonialism, the core nation incontrovertibly manipulated, and exploited semi, and Periphery regions endowed with natural resources and minerals that immerse and underpin the core regions' current advancement and development in the socio-economic and political spheres of the world. As a result of this exploitative nature of the colonial period, thus peripheral regions were undeniably affected and considered undeveloped and backward nations in which they depended on the mercy of financial aid and support of the core nations. In the post-colonial era thus semi-periphery and periphery regions become an ideological battlefield of politico-ideological animosity of the core state. As well in the contemporary world, the legacy of colonial and post-colonial socio-economic and political relationships among the core, semi, and periphery nations is expressed through the system of global free market system which the system allows and creates suitable opportunities to benefit the core rather than periphery nations affected by the system. Climate change is thus more than merely an environmental phenomenon. Not only are its causes rooted in societal practices, but its consequences also extend far beyond its immediate natural impacts. Direct impacts such as rising sea levels and changes in the distribution of rainfall may make areas uninhabitable, disrupt critical infrastructure, impose health risks, threaten food security, undermine livelihoods, and aggravate youth and women unemployment that depend on natural resources. Critically, these impacts are unequally distributed, reflecting variation in exposure to climate change as well as in the extent to which people can adapt to it.

Globally, this gives rise to the cruel fact that 'those nations most responsible for emitting greenhouse gases are best positioned to protect themselves, Whereas nations with the lowest carbon footprint generally possess few resources to do so'. At the same time, climate change may also aggravate social inequalities within countries, thereof needs global collective efforts and action while undertaking climate change mitigation and adaptation actions across world. Therefore, to attain or reach the development level of semi-peripheries or core nations developing countries like Ethiopia should undertake appropriate internal adjustment including development policy; including:- effective and efficient utilization of available resources within a nation, social and economic policy, foreign relations policy, investment and trade policy. The conclusion section should precisely articulate the main findings of the article, emphasizing its significance and relevance. In the conclusion, it is highly recommended that authors avoid referencing figures or tables. Instead, these should be appropriately referenced within the body of the paper.

Abbreviations

GHGs	Green House Gas
WSA	World System Analysis
UNDP	United Nation Development Program
FAO	Food and Agricultural Organization
IPCC	Intergovernmental Panel on Climate Change
ILO	International Labour Organization

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Author Contributions

Seid Ahmed is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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Biography



Seid Ahmed has wide range of academic and professional foundation and aspiration towards social research particularly on climate resilience, rural livelihood, food security, social policy analysis, resilience building, gender, youth and women equality, social equity, child protection, disaster risk management, social protection, migration and displacement, and Indigenous knowledge system and practices among other. He is currently working for Ayuda en Acción and have well equipped professional experience with nearly 10 years of expertise's in humanitarian and development thematic field, while worked for non-governmental international organizations, including Vita Impact, SCI, iDE, and ASE. He has immense experiences in performing and excel tasks in meticulous attitude and wide spectrum of an integrated multi-sectoral community based projects and programs. As far as educational background he accredited his first degree in Sociology and Social Work with honor second upper class from Jimma University, and has master degree in Sociology from Hawassa University, Ethiopia.

Research Field

Seid Ahmed: Pertinent to his academic research skills, knowledge and professional experience, he is much more interested in Climate resilience, rural livelihood, climate change mitigation and adaptation, food security, social and economic policy analysis, resilience building, gender, youth and women, social equity, child protection, disaster risk management, social protection, migration and displacement, and Indigenous knowledge system and practices research field.