

## FOOD SECURITY AND CLIMATE CHANGE: NEED FOR POLICY INTERVENTION

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### Abstract

There are scientific evidences that the climate is changing and the graph is towards the warming of the Earth. Agriculture is directly related with the state of the climate. The temperature, water, rain-fall, precipitation etc. together determine the carrying capacity of a particular area. The Intergovernmental Panel on Climate Change (IPCC, 2007) states that because of the changing climate conditions, increased frequency of heat stress, drought and floods shall negatively affect crop yields and livestock. The climate variability and change also modify the risks of fires, pest and pathogen outbreak, negatively affecting food, fiber and forestry.

On the other hand, the right of food and adequate nutrition is being recognized as a human right in international human rights law regime across the globe. This right finds its roots in the Universal Declaration of Human Rights, 1948. The Supreme Court of India has been issuing orders from time to time asking the governments to identify the needy within their jurisdictions, and to ensure that they receive adequate food. The first Millennium Development Goal states that the UN 'is to eradicate extreme hunger and poverty', and that 'agricultural productivity is likely to play a key role in this if this is to be reached on time'.

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1. See [http://en.wikipedia.org/wiki/Food\\_security](http://en.wikipedia.org/wiki/Food_security)
2. See Para 6, General Comment 12, UN's Committee on Economic, Social and Cultural Rights, 1999.
3. See <http://www.who.int/trade/glossary/story028/en>

As a consequence of the impact of changing climate on agriculture, the food scarcity is further bound to increase. Therefore, in order to ensure the right to adequate food and nutrition, the intervention in existing policies regarding agriculture and food security is necessary. The present paper is a humble attempt in this regard.

### **Food Security: Meaning**

Food security refers to the availability of food and one's access to it. A household is considered food-secure when its occupants do not live in hunger or fear of starvation.<sup>1</sup>

The World Food Summit, 1996 defines food security as existing that when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life. The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement.<sup>2</sup>

Food security is built on three pillars:<sup>3</sup>

1. Food availability: sufficient quantities of food available on a consistent basis.
2. Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
3. Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

Food security is a complex sustainable development issue, linked to health through malnutrition, but also to sustainable economic development, environment, and trade. There is a great deal of debate around food security with some arguing that:<sup>4</sup>

- (a) There is enough food in the world to feed everyone adequately; the problem is distribution.
- (b) Future food needs can - or cannot - be met by current levels of production.
- (c) National food security is paramount - or no longer necessary because of global

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4. *Ibid.*

5. *Ibid.*

6. [http://uk.oneworld.net/guides/food\\_security?gclid=CNPBk TwuKsCFQQb6wodLCn\\_ca#Right\\_to\\_Food](http://uk.oneworld.net/guides/food_security?gclid=CNPBk TwuKsCFQQb6wodLCn_ca#Right_to_Food)

7. Article 25 (1), Universal Declaration of Human Rights

trade.

(d) Globalization may - or may not - lead to the persistence of food insecurity and poverty in rural communities.

Issues such as whether households get enough food, how it is distributed within the household and whether that food fulfils the nutrition needs of all members of the household show that food security is clearly linked to health.<sup>5</sup>

However, there is no straightforward, universally accepted definition of food security. Most versions stipulate secure access to sufficient and affordable nutritious food. Such conditions for food security can be assessed on any scale, from a single household to the global population. In this least serious degree, food insecurity indicates only the risk of hunger, not necessarily its presence. By contrast, chronic food insecurity denotes a constant condition of hunger. Famine is the most extreme state of food insecurity. It exists where a series of hunger indicators, including mortality, cross critical thresholds set by the UN.<sup>6</sup>

### **Right to Food - a Human Right**

The right to food and nutrition are being recognized as a human right in International Human Rights law. This right finds its roots in the Universal Declaration of Human Rights, 1948. The Universal Declaration of Human Rights reads as “everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food...”<sup>7</sup> The International Covenant on Economic, Social and Cultural Rights (which came into force in 1976), says that “The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing, and housing....”<sup>8</sup> It also recognizes “the fundamental right of everyone to be free from hunger....”<sup>9</sup> In addition to that the *Convention on the Rights of the Child* (which came into force in 1990), also recognizes the nutrition right of a child. It says that “States Parties recognize the right of the child to the enjoyment of the highest

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8. Article 11, International Covenant on Economic, Social and Cultural Rights

9. *Ibid.*

10. Para. 1, Article 24, Convention on the Rights of the Child, 1990.

11. Para 2 c, *Ibid.*

14. Article 24, Convention on the Rights of the Child, 1990

attainable standard of health....”<sup>10</sup> It further imposes the obligation on the States to take appropriate measures “to combat disease and malnutrition...through the provision of adequate nutritious foods, clean drinking water, and health care.”<sup>11</sup> It also says that States Parties shall take appropriate measures “...To ensure that all segments of society, in particular, parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition [and] the advantages of breastfeeding . . .”<sup>12</sup> It further keep on to say that States Parties shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing, and housing.<sup>13</sup>

In the year of 1996, the World Food Summit held in Rome with the aim of renewing global commitment to the fight against hunger. The Food and Agriculture Organization of the United Nations (FAO) called the summit in response to widespread under-nutrition and growing concern about the capacity of agriculture to meet future food needs. The conference produced two key documents, the Rome Declaration on World Food Security and the World Food Summit Plan of Action. The plan of action of the Summit called upon the UN High Commissioner for Human Rights, in consultation with relevant treaty bodies, and in collaboration with relevant specialized agencies and programmes of the UN system and appropriate intergovernmental mechanisms, to better define the rights related to food in Article 11 of the Covenant and to propose ways to implement and realize these rights....<sup>14</sup> On May 12, 1999 the UN’s Committee on Economic, Social and Cultural Rights published a document known as General Comment 12 (Twentieth session, 1999): The Right to Adequate Food. It states that “the right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement”<sup>15</sup> It explains that *adequacy* means that account must be taken of what is appropriate under given circumstances. Food *security* implies food being accessible for both present and future generations. *Sustainability* relates to long-term availability and

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15. Para 6, General Comment 12, UN’s Committee on Economic, Social and Cultural Rights, 1999.

16. Para 7, *Ibid.*

17. Para 8, *Ibid.*

18. Para 14, *Ibid.*

19. Para 15, *Ibid.*

accessibility.<sup>16</sup> According to the General Comment, the right to adequate food means “the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture; the accessibility of such food in ways that are sustainable and that do not interfere with the enjoyment of other human rights”<sup>17</sup> It imposes the obligations on the States as follows: Every State is obliged to ensure for everyone under its jurisdiction access to the minimum essential food which is sufficient, nutritionally adequate and safe, to ensure their freedom from hunger.<sup>18</sup> The right to adequate food, like any other human right, imposes three types or levels of obligations on States Parties: the obligations to *respect*, to *protect* and to *fulfill*. In turn, the obligation to *fulfill* incorporates both an obligation to *facilitate* and an obligation to *provide*. The obligation to *respect* existing access to adequate food requires States Parties not to take any measures that result in preventing such access. The obligation to *protect* requires measures by the State to ensure that enterprises or individuals do not deprive individuals of their access to adequate food. The obligation to *fulfill (facilitate)* means the State must pro-actively engage in activities intended to strengthen people’s access to and utilization of resources and means to ensure their livelihood, including food security. Finally, whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to *fulfill (provide)* that right directly. This obligation also applies for persons who are victims of natural or other disasters.<sup>19</sup>

In the year of 1999 the World Summit on Food Security was held at Rome. The Summit adopted unanimously a declaration committing all the nations of the world to eradicate hunger at the earliest possible date. It pledged to substantially increase aid to agriculture in developing countries, so that the world’s 1 billion hungry can become more self-sufficient. The declaration confirmed the current target for reducing hunger by half by 2015. Countries agreed to work to reverse the decline in domestic and international funding for agriculture and promote new investment in

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20. See [http://www.fao.org/fileadmin/templates/wsfs/ Docs/Final\\_Declaration/WSFS09\\_Declaration.pdf](http://www.fao.org/fileadmin/templates/wsfs/Docs/Final_Declaration/WSFS09_Declaration.pdf).

21. See *Maneka Gandhi v. Union of India*,

the sector, to improve governance of global food issues in partnership with relevant stakeholders from the public and private sector, and to face the challenges of climate change to food security.<sup>20</sup>

### **Constitutional Mandate**

Article 21 of the Indian Constitution states that “no person shall be deprived of his life or personal liberty except according to procedure established by law.” The Supreme Court through judicial interpretations has expanded this right in two ways, firstly, any law affecting personal liberty should be just, fair and reasonable; secondly, the expression ‘life’ in this Article, has been interpreted to mean a life with human dignity and not mere survival or animal existence.<sup>21</sup> Thus, the Court has incorporated many unarticulated liberties which are supposed to be necessary to live with human dignity.

In the light of this, the State is obliged to provide for all those minimum requirements which must be satisfied in order to enable a person to live with human dignity, such as education, health care, just and humane conditions of work, protection against exploitation etc. Thus, the Right to Food is inherent to a life with dignity, and Article 21 should be read with Articles 39(a) and 47 to understand the nature of the obligations of the State in order to ensure the effective realization of this right. Article 39(a) of the Constitution, enunciated as one of the Directive Principles, fundamental in the governance of the country, requires the State to direct its policy towards securing that the citizens, men and women equally, have the right to an adequate means to livelihood. Article 47 spells out the duty of the State to raise the level of nutrition and the standard of living of its people as a primary responsibility. The citizen’s right to be free from hunger enshrined in Article 21 is to be ensured by the fulfillment of the obligations of the State set out in Articles 39(a) and 47. The reading of Article 21 together with Articles 39(a) and 47, places the issue of food security in the correct perspective, thus making the Right to Food a guaranteed Fundamental Right which is enforceable by virtue of the constitutional remedy provided under Article 32 of the Constitution. The requirements of the Constitution preceded, and are consonant with, the obligations of the State under

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22. People’s Union for Civil Liberties v. Union of India and Others, In the Supreme Court of India, Civil Original Jurisdiction, Writ Petition (Civil) No.196 of 2001.

the 1966 International Covenant of the Economic, Social and Cultural Rights to which India is a party. That Covenant, in Article 11, expressly recognises the right of everyone to an adequate standard of living, including adequate food.

### **Judicial Response:**

The apex court has also expressed its concern over the issues of starvation and nutrition. On April 16, 2001, the PUCL submitted a writ petition to the Supreme Court of India asking three major questions:<sup>22</sup>

1. Starvation deaths have become a National Phenomenon while there is a surplus stock of food grains in government godowns. Does the right to life mean that people who are starving and who are too poor to buy food grains free of cost by the State from the surplus stock lying with the State particularly when it is lying unused and rotting?
2. Does not the right to life under Article 21 of the Constitution of India include the right to food?
3. Does not the right to food which has been upheld by the apex Court imply that the State has a duty to provide food especially in situations of drought to people who are drought affected and are not in a position to purchase food?

As a result of the ongoing proceedings, the Supreme Court has been issuing orders calling upon government agencies to identify the needy within their jurisdictions, and to assure that they receive adequate food. On July 23, 2001, the court said that “In our opinion, what is of utmost importance is to see that food is provided to the aged, infirm, disabled, destitute women, destitute men who are in danger of starvation, pregnant and lactating women and destitute children, especially in cases where they or members of their family do not have sufficient funds to provide food for them. In case of famine, there may be shortage of food, but here the situation is that amongst plenty there is scarcity. Plenty of food is available, but distribution of the same amongst the very poor and the destitute is scarce and non-existent leading to mal-nourishment, starvation and other related problems.”<sup>23</sup>

The court also reminded the States that “certain schemes of the Central Government are mentioned which are required to be implemented by State

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23. *Ibid.*

24. *Ibid.*

Governments: These schemes are: Employment Assurance Scheme which may have been replaced by a Sampurna Gramin Yojana, Mid-day Meal Scheme, Integrated Child Development Scheme, National Benefit Maternity Scheme for BPL pregnant women, National Old Age Pension Scheme for destitute persons of over 65 years, Annapurna Scheme, Antyodaya Anna Yojana, National Family Benefit Scheme and Public Distribution Scheme for BPL & APL families. The Chief Secretaries of all the States & the Union Territories are hereby directed to report to the Cabinet Secretary, with copy to the learned Attorney General, within three weeks from today with regard to the implementation of all or any of these Schemes with or without any modification and if all or any of the Schemes have not been implemented then the reasons for the same.”<sup>24</sup>

### **National Food Security Bill, 2011**

The National Advisory Council has proposed the National Food Security Bill, in the month of July, 2011. The long title of the Bill states that this is an Act to ensure public provisioning of food and related measures to enable assured economic and social access to adequate food, for all persons in the country, at all times, in pursuance of their fundamental right to live with dignity. The preamble attached to the Bill intends to recognize and give effect to various provisions of international instruments on the subject including Article 25 of the Universal Declaration of Human Rights (1949); Article 11 of the International Covenant on Economic, Social and Cultural Rights (1966) and General Comment 12 of the Committee on Economic, Social and Cultural Rights; Articles 22, 23, 24, 26, 27.1 and 27.3 of the Convention of the Rights of the Child; Article 12, 13 and 14 of the Convention on the Elimination of All Forms of Discrimination against Women; Articles 5, 25 and 28 of the Convention on the Rights of Persons with Disabilities; Articles 14

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25. See Preamble attached to the National Food Security Bill, 2011.

26. Section 4, the Draft National Food Security Bill, 2011.

27. Section 6, *Ibid.*

28. Section 7, *Ibid.*

29. Section 8, *Ibid.*

30. Section 9, *Ibid.*

and 15, Article 21, Article 39 (a), Article 41, Article 42 and Article 47 of the Constitution of India. It also says that the transparency and accountability are the cardinal principles underlying the implementation of the proposed Bill; and the existing administrative machinery for the disposal of grievances needs to be strengthened to secure the ends of justice; and effective redressal of a violation of a person's rights and entitlements is essential to the enjoyment of the rights; And the Supreme Court of India has recognized the right to food and nutrition as integral to the right to life; and further specified variously the corresponding duties of the State; therefore, a set of core entitlements within the universal right to food and nutrition are provided to be enjoyed and progressively expanded until universal access to adequate nutrition is achieved.<sup>25</sup>

The Bill has been divided into eighteen chapters. Chapter III of the Bill deals with food security. It says that every person shall have physical, economic and social access, at all times, either directly or by means of financial purchases, to quantitatively adequate, sufficient and safe food, which ensures as active and healthy life.<sup>26</sup> It also provides for the entitlements of pregnant and nursing women,<sup>27</sup> children at the age group of 0-6 years<sup>28</sup> and mid day meal to children.<sup>29</sup> It also provides that any child below the age of 14 may approach to any agency providing food for getting it. No institution shall deny a freshly cooked nutritious meal to such a child.<sup>30</sup> It imposes a duty on State Governments to identify the children who suffer from malnutrition and treat and prevent the same.

Chapter IV deals with the entitlements of special groups. It provides that the State Government shall provide all destitute persons at least one freshly cooked meal at every day.<sup>31</sup> It also provides entitlements for homeless,<sup>32</sup> migrants<sup>33</sup> all persons affected by the emergency or disaster situations.<sup>34</sup> Chapter V deals with the rights of persons living in starvation.

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31. Section 11, *Ibid.*

32. Section 12, *Ibid.*

33. Section 13, *Ibid.*

34. 9 Section 14, *Ibid.*

35. See [uk.oneworld.net/guides/food\\_security#climate\\_change](http://uk.oneworld.net/guides/food_security#climate_change).

It also provides a mechanism for the implementation of the Act.

### **Impact of Climate Change:**

Climate may be understood as sum total of temperature, humidity, precipitation, winds, radiation, and other meteorological conditions characteristic of a locality or region over an extended period of time and climate change is any long-term significant change in the 'average weather' that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. Accumulation of green house gas in atmosphere is most responsible for causing climate change. The graph of the change is towards the warming of the Earth.

Climate change was first perceived as an environmental phenomenon, then as an economic exercise on costs and benefits, but now increasingly as a potential human rights calamity. As the impacts of global warming on crop yields, water cycles, extreme weather events and rising sea levels become better understood, the projections of deaths, malnutrition, disease and displacement acquire greater credibility. All such outcomes infringe social and economic rights.<sup>35</sup>

Agriculture is highly sensitive to climate variability and weather extremes, such as droughts, floods and severe storms. The forces that shape our climate are also critical to farm productivity. Human activity has already changed atmospheric characteristics such as temperature, rainfall, levels of carbon dioxide (CO<sub>2</sub>) and ground level ozone. The scientific community expects such trends to continue. While food production may benefit from a warmer climate, the increased potential for droughts, floods and heat waves will pose challenges for farmers. Additionally, the enduring changes in climate, water supply and soil moisture could make it less feasible to continue crop production in certain regions.<sup>36</sup> The Intergovernmental Panel on Climate Change (IPCC, 2007) concluded: Recent studies indicate that

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36. See [www.epa.gov/climatechange/effects/agriculture.htm#climate](http://www.epa.gov/climatechange/effects/agriculture.htm#climate).

37. IPCC, 2007: Climate Change 2007: Impacts, Adaptation, and Vulnerability: Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)]. Cambridge University Press, Cambridge, United Kingdom, See *Ibid*.

38. *Ibid*.

39. *Ibid*.

increased frequency of heat stress, droughts and floods negatively affect crop yields and livestock beyond the impacts of mean climate change, creating the possibility for surprises, with impacts that are larger, and occurring earlier, than predicted using changes in mean variables alone. This is especially the case for subsistence sectors at low latitudes. Climate variability and change also modify the risks of fires, pest and pathogen outbreak, negatively affecting food, fiber and forestry.<sup>37</sup>

Several factors are directly connected with climate change and agricultural productivity. These factors include:

1. Average temperature increase: An increase in average temperature can i) lengthen the growing season in regions with a relatively cool spring and fall; ii) adversely affect crops in regions where summer heat already limits production; iii) increase soil evaporation rates, and iv) increase the chances of severe droughts.<sup>38</sup>
2. Change in rainfall amount and patterns: Changes in rainfall can affect soil erosion rates and soil moisture, both of which are important for crop yields. The IPCC predicts that precipitation will increase in high latitudes, and decrease in most subtropical land regions-some by as much as about 20 percent. While regional precipitation will vary the number of extreme precipitation events is predicted to increase.<sup>39</sup>
3. Rising atmospheric concentrations of CO<sub>2</sub>: Increasing atmospheric CO<sub>2</sub> levels, driven by emissions from human activities, can act as a fertilizer and enhance the growth of some crops such as wheat, rice and soyabeans. CO<sub>2</sub> can be one of a number of limiting factors that, when increased, can enhance crop growth. Other limiting factors include water and nutrient availability. While it is expected that CO<sub>2</sub> fertilization will have a positive impact on some crops, other aspects of climate change (e.g., temperature and precipitation changes) may temper any beneficial CO<sub>2</sub> fertilization effect.<sup>40</sup>
4. Pollution levels such as tropospheric ozone: Higher levels of ground level ozone limit the growth of crops. Since ozone levels in the lower atmosphere are shaped by both emissions and temperature, climate change will most likely increase

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40. *Ibid.*

41. *Ibid.*

42. *Ibid.*

43. State of Food Insecurity in the World 2003, **See** <http://www.fao.org/docrep/006/j0083e00.htm>

ozone concentrations. Such changes may offset any beneficial yield effects that result from elevated CO<sub>2</sub> levels.<sup>41</sup>

5. Change in climatic variability and extreme events: Changes in the frequency and severity of heat waves, drought, floods and hurricanes, remain a key uncertainty in future climate change. Such changes are anticipated by global climate models, but regional changes and the potential affects on agriculture are more difficult to forecast.<sup>42</sup>

### **Need for Policy Intervention:**

There are various international legal instruments which ensure the right to food. In the home, the National Advisory Council in consonance with the international regimes and verdict of the Hon'ble Supreme Court on starvation case has introduced the National Food Security Bill in this very year. The Bill imposes an obligation on the Governments to provide food to every needy person.

The first UN Millennium Development Goal states that the UN "is to Goals are one of the initiatives aimed at achieving food security in the world. In its eradicate extreme hunger and poverty", and that "agricultural productivity is likely to play a key role in this if it is to be reached on time".

The Food and Agriculture Organization states that "in general the countries that succeeded in reducing hunger were characterized by more rapid economic and specifically more rapid growth in the agriculture sectors. They also exhibited slower population growth, lower levels of HIV and higher ranking in the Human Development Index"<sup>43</sup> As such, according to FAO, addressing agriculture and population growth is vital to achieving food security. Other organizations and people have come to this same conclusion, and advocate improvements in agriculture and population control.<sup>44</sup>

Keeping in view the international and national regimes on food security on the one hand, and possible adverse impacts of climate change on food production in future on the other, intervention in some of the existing policies is felt necessary in order to ensure food security in the country. Food insecurity may further result by extreme weather conditions such as flood, drought, famine or any other disaster.

The urgent areas of policy intervention include:

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<sup>44</sup> [http://en.wikipedia.org/wiki/Food\\_Security](http://en.wikipedia.org/wiki/Food_Security).

(a) Population policy

(b) Agriculture policy: that there is a need to generate the data regarding the impact of climate change on food production in each and every climatic zone of the