

Non-Wood Forest Products Role in Increment of Food Production and Security

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Abstract:

Food security implies to have physical and economic access of people to sufficient food to meet dietary needs for productive and healthy life. Today, more than 800 million people across the world go to bed hungry every night. Most of them depend on agriculture to make living and feed their families. New problems related to climate change, hurting food production disrupting supply chains and people's ability to access affordable food. Improving access to safe and nutritious food and maintaining food security in times of crises is essential in ensuring the prospects of future generation. Non-wood forest products (NWFP) can help in solving food security problems with healthy, natural products. Most countries of the world ignore NWFP regarding them incidental. Only Baltic republics and some east European countries like Finland, Czech Republic, Slovakia etc. have always been among advanced countries successfully utilizing NWFP. It helped these countries to satisfy local populations' demand on healthy products free from GMO additives. Nutritionists well know that wild NWFP are richer with vitamins and other essential minerals and nutrients necessary for human diet than their cultural analogs. Unfortunately, NWFP in Georgia, like in the most countries of the world, are neither accounted, nor used and it is inexcusable overlook of the government.

Key words: forest; NWFP; security; food; wild; product; deforestation; decertification

1. Introduction

Nearly a billion of people across the world experience effects of food security [1]. Even in the US, according to the recent data from the United States department of Agriculture, approximately 14.7 percent of households experience low or very low food security [2]. It is about 50 million people in the US, including about 17 million children [3]. FAO states that about 925 million people in the world are undernourished [4]. The most of them live in Asia and the Pacific Islands, followed by sub-Saharan Africa [5]. Food security means having at all times physical and economic access to sufficient food to meet dietary needs for productive and healthy life. Today hundreds of thousands of people across the world go to bed hungry every night. Most of them depend on agriculture to make living and feed their families. Nearly 75% of poor people in developing countries live in rural areas [6-8].

New problems related to climate change, pests and infectious diseases like Covid-19, African Swine Fever etc. affect food production disrupting supply chains and people's ability to access affordable food, raising acute concerns for food security. Improving access to safe and nutritious food and maintaining food security in times of crisis are the fundamental problems in ensuring the prospects of future generations [9].

2. Results and Analysis

2.1 The biggest threats to global food security today are:

2.1.1 Climate change and environmental shocks

According to the new study of NASA maize crops are among the most threatened under high greenhouse gas emissions. Maize crop yields are projected to decrease by about 24% [6]. The production of some other crops like rice and wheat is also projected to decline drastically due to climate change. The global warming is also responsible for droughts and catastrophic wildfires both of which are risk to global food security. They reduce the availability of water a crucial resource to keep irrigated agriculture.

2.1.2 Population increase and modern food system

By prediction in 2050 total number of people on the planet will reach nearly 10 billion. It means more mouths to feed and strain on food resources in the world. The agriculture system of the world is already struggling to meet global needs. According to the 2020 IPCC Special Report on climate change since 1961 food supply per capita has grown more than 30% [10]. As a consequence the use of nitrogen fertilizers and

water needed to boost agricultural production increased by 800 % and 100% respectively. Another problem related to the present food system is that we produce food using intensive farming techniques production of large amount of food at lower prices using dangerous amounts of fertilizers. According to the United Nations the global food system now accounts for one-third of greenhouse gas emissions due to more energy-intensive methods implemented to increase the amount of food production [11].

2.1.3 Disruption in Food Chains

Another problem of food security in future is disruptions in the food chains. Two recent catastrophic events heavily compromised global foods chain. The first was Coronavirus-19 pandemic and another the war in Ukraine. At first they lead to immediate food shortages in the countries involved in the conflict. But aftermath it is getting larger. As the conflict involves Ukraine it isn't able to harvest existing crops and plant new ones. This process is leading to the disruption of both local and international chains. Experts fear the global wheat crisis they contribute by Russia nearly one third of all wheat exports. According to the estimations in 2021 55% of Ukrainian wheat was exported to Asia and 41% to Africa. But besides wheat these two countries produce the greater part of corn and barley. Since Russians invasion to Ukraine the wheat prices have increased by 21% and Barley by 33% accordingly by the New-York Times information [12]. So, the world faces the great unpleasant future ahead and countries leaders of the world will have big headache to solve this problems.

Forests make our planet livable but human adverse activities destroy this process. Deforestation is the growing threat to all life on earth, driving dangerous carbon dioxide emissions and exacerbating the crisis. Forests provide home to hundreds of millions of flora and fauna species on the planet. They play a vital role in carbon cycle by balancing greenhouse emissions making air breathable and mitigating climate change processes. But deforestation to make room for agriculture and industry have detrimental consequences for all living organisms on earth. It threaten environment, human lives and millions of animals. Like the oceans, seas and other water containing surfaces, forests absorb excess atmospheric carbon dioxide and serve as a buffer against irreversible climate change until now, but if the climate change process cannot be stopped at 1.5 Oof Centigrade by 2030 and exceed this gradient there will begin irreversible adverse processes in atmosphere [13]. Until now most of the countries' leaderships in the world think that the scientists exaggerate this prediction, but this ignorance of scientific recommendations based on research may have irreversible consequences for life on earth and those leaderships will regret their ignorance but it may be too late.

Under the climate change processes the biodiversity and human losses achieve catastrophic levels at first especially suffer children and old and sick people, people with cardiovascular diseases and asthma who cannot withstand breathing rarefied air. It will be like being on 4-5 thousand meters of elevation where mountaineers use respiratory apparatus [14]. The main causes of deforestation and forest degradation in the world are: forest fires, illegal loggings, mining, paper production, urbanization, desertification of land. Adverse effects of deforestation and forest degradation on humans are: health, food insecurity, local peoples' livelihoods, environmental degradation, soil erosion, climate change, floods, biodiversity loss, habitats loss, wildlife extinction, acidic oceans and seas [15].

2.2 NWFP Role in Increasing food Production and Security

Besides all the benefits described above that forests provide for mankind, they can mitigate the process of food shortage and security in the world by providing NWFP [16]. Non-wood forest products include such wild products as: fruit and berries, mushrooms, nuts (hazel-nuts, beech tree nuts), acorn, honey, hips, medicinal herbs, condiments, sap, meat of wild

animals and birds, and most valuable and priceless substance as oxygen that maintains the life of humans and all species of flora and fauna on the planet. NWFP are biological products and can be gathered from wild forests as well as from plantations, agroforestry and trees outside of forests. Some of them can be consumed raw, while others require complex processing before eating.

From the very beginning of the civilization the main product of forests have always been considered firewood for warming household and cooking and timber for construction of houses and furniture. Unfortunately, this attitude is still continued in the most countries of the world today. From 2023 outlook such principle of using forest resources seems extremely primitive and detrimental in conditions of climate change process. According to the east European countries research NWFP production often exceed the financial incomes from selling the timber itself. Nowadays forests are increasingly recognized as rich reservoirs of many valuable biological resources not just timber. The Baltic Republics (Estonia, Latvia and Lithuania), Czech Republic, Slovakia, Finland, Denmark are the most advanced countries in east Europe in producing different products from NWFP [17]. Even in the Soviet period they managed to produce jams and juices from different wild fruits and berries, sold meat of wild animals and birds, lichen, condiments etc. In Georgia these valuable NWFP are neither accounted, nor used and it is an inexcusable overlook for the country with limited natural resources and many economic problems. It's high time to pay due attention to this problem.

3. Conclusions

In 2020 seven countries reported decreased deforestation to the United Nations Framework Convention on Climate Change. These countries achieved it by strengthening logging rules and requiring that timber imports were harvested legally. Some more countries governments introduced forest conservation polices. 50 countries pledged to protect 30% of the planet by 2030. FAO suggested the governments should create buffer zones around protected territories where no cattle ranching be allowed.

The global demand for meat drives of deforestation, especially in the Amazon region. Consequently, we must eat less meat to cut down meat consumption entirely. The United Nations climate change report describes plant-based diets as a major opportunity for mitigating and adapting to climate change and it recommends policy of reducing meat consumption.

We think that such international organizations as FAO and UNEP must be given additional right to impose quotas for logging amounts, especially to forest rich countries and monitoring carefully these regulations in case of violating these quotas against these countries must be imposed by very strict sanctions. Their wood and wood-made products mustn't be admitted to the international markets. These countries leaders must know that forests located on their territories don't belong only to them. They belong to the whole mankind. There are no barriers between countries in the air. As less forests will be logged in the world as more be their share in mitigation of climate change process.

There is a very wise, old Kashmiri adage: FOOD WILL DO AS LONG AS FORESTS DO'' and everybody must remember it especially government leaders and policy-makers. employment opportunity to the youth in urban agriculture. Wealth is next door through dried mushrooms business for poverty alleviation among the urban youth in Benin and West Africa.

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