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## **Dietary disease, and it's true impact on the Health and wellness of Uzbekistan- A wakeup call**

When food comes to mind, we all think of comfort and how it relates to a positive mood and sense of one's well being. However that isn't the case in all countries. Some countries aren't able to necessarily enjoy and get reliable food on a daily basis. Uzbekistan is one of the countries that struggles with diseases related to poor diet. Countries compete in aspects of daily life, however being the highest country to lose people due to food is concerning, according to the Magazine The Week Uzbekistan has the most deaths related to poor food habits predominantly cardiovascular diseases and cancer, with a total of 892 deaths per 100,000 (1).

Foodborne illness is a type of disease that can affect people and animals. The main causes of this illness are parasites, bacteria, toxins, and viruses. The symptoms of this disease can vary from mild to severe. In the US, it has been estimated that up to 80,000 to 90,000 deaths annually due to various foodborne diseases(18). However, due to the changes in the food supply and the identification of new diseases, these estimates are no longer accurate. New estimates are needed to guide the development of effective food safety regulations. The food supply in our country has changed over the last few decades. New technologies, such as the production of genetically modified organisms GMOs and pesticides, have completely changed the way some foods are grown. GMO crops have been planted on hundreds of millions of acres of land in just a decade. This has caused a sharp increase in sales of these products, which is causing major repercussions throughout the world. The use of pesticides and herbicides has increased many times over, at an ever-increasing rate. In addition, there are new diseases, such as Salmonella Enteritidis infection that have appeared.

The Uzbekistan population in 2020 was 32.96 million (2). 63% of the population lives in rural areas and 37% in cities. This country is a unitary country and Mr. Shavkat Mirzjoyev serves as the current President. 63% of the population lives in rural areas and 37% in cities. Uzbekistan has declared a high level of literacy with 100% literacy rate for adults between the ages of 25-49 (2). However, it is also estimated that 25% of its population is affected by malnutrition, most probably due to the lack of knowledge regarding healthy eating which will be discussed in this article (1). According to an article from

2014, “only 41% eat fruit daily” while 34% consume vegetables on a daily basis in addition to dairy consumption (2). Most of the population is urban therefore having access to food, but not necessarily the cleanest and healthiest food. The population was and still is highly impacted according to Eureka “1 in every 5 people who live in Uzbekistan either die or are impacted by a dietary disease.” In 2017, there was a ten-fold difference between the country with the highest rate of diet-related deaths (Uzbekistan) and the country with the lowest (Israel) (5). Diets high in sodium, low in whole grains, and low in fruit together accounted for more than half of all diet-related deaths globally in 2017 [17].

According to CIA (1), based on 2018 data, land use agricultural land: 62.6% arable land: 10.1% permanent crops: 0.8%, with small to moderate sized farms averaging 24 Hectares (9) compared to farms in the USA averaging 444 acres. The crops grown are for immediate family with some sold to others. Common food crops grown are wheat, barley, flax, onions, leeks, garlic, beans, lettuce, lentils, cabbages, radishes, turnips, grapes, figs, plums, and melons.

Uzbekistan's climate is arid and semi arid. Uzbekistan is the world's only other doubly landlocked country. Covering an area of 500,000 square kilometers, Uzbekistan is roughly the size of California.” The country has space and its land is categorized and diverse; country reports states “Most of the country is desert (the Kyzylkum and the Karakum) or irrigated steppe, but it has rugged mountains in the east ,a branch of the Tien Shan range, as well as semi-arid grassland” (4). The country has no oil or mineral wealth and because of the high population density and scarcity of arable land there are severe overcrowding problems in urban areas. These difficulties have had a significant impact on nutrition, health, morbidity, mortality and the environment (4).

The Uzbekistan population is divided into 5 main ethnic groups: Uzbeks , Tajiks , Tatars , Lezgins, and Russians. They are further classified into four main groups by language family: Turkic peoples (Uzbeks, Tatars), Iranian peoples (Tajiks), Indo-European peoples (Russians), and Altaic speakers.

Uzbekistan is a male-dominated society, particularly in the Ferghana Valley. Nevertheless, women make up nearly half the workforce. They hold just under 10 percent of parliamentary seats, and 18 percent of administrative and management positions, according to U.N. figures. Women run the households and traditionally control the family budgets (5). Typical family size is 4, with about 41% of households consisting between one and four family members with the average size of a household holding 1-4 members (4). A typical Uzbekistan citizen will have either an urban job or a rural job

ranging from being physician to being a farmer or maid. The job salary ranges from \$1,734- 13,818 (11).

Given the access to good quality food and a central government that supports health and education among the population, the high mortality needs a deeper understanding of the history of Uzbekistan. The landlocked country is one of the poorest in the world, and has been ruled by a dictatorial government for decades. In the late 19th century, Russia captured Uzbekistan and with the advent of "soviet era" intense production of cotton (white gold) coupled with overuse of agrochemicals and the depletion of water supplies, leaving the land degraded and the Aral Sea and certain rivers half-dry (3). The shrinkage of the Aral Sea has resulted in growing concentrations of chemical pesticides and natural salts; these substances are then blown from the increasingly exposed lake bed and contribute to desertification and respiratory health problems; water pollution from industrial wastes and the heavy use of fertilizers and pesticides is the cause of many human health disorders; increasing soil salinization; soil contamination from buried nuclear processing and agricultural chemicals, including DDT, making the citizens sick. This coupled with poor diets. High sugar consumption and lower consumption of fruits and vegetable, has about 17% of the population overweight or obese (3).

Solutions for Uzbekistan:

A multi- dimensional approach is needed to address the very preventable dietary diseases prevalent in Uzbekistan.

- a) Concerted efforts are needed to reduce the use of pesticides and fertilizers so the land can return to its natural state. Focus and infrastructure should be on organic and optimal use of limited water available (such as drip irrigation)
- b) Efforts at the national level on reducing intake of sugars, salt, through education and public awareness.
- c) Equitable access to fresh, locally grown fruits and vegetables that reduces reliance on high levels of resources needed to grow meats.

The pros of these solutions are

- a) Gradually returns the land, soil and water bodies to their natural state.
- b) Changes to build a reliance on traditional cuisines and moving away from foods (fast foods) that are high in fats, sugars and salt.
- c) Education to empower future generations by organized efforts by central and local governments for eating healthy.

## Some limitations of the proposed solutions

- a) Requires a sustained effort at multiple levels that will take time and there is no easy fast track way.
- b) Culture is hard to change and might not succeed without active engagement at all levels.

I strongly believe these solutions proposed have worked in other countries such as Africa, which faces water shortages to developed countries like the USA which has reduced reliance on fertilizers, herbicides and increased awareness for healthy organic offerings sourced locally at farmers markets.

To enable the change, a top down as well as bottom up efforts (grass root efforts) that supports creation of infrastructure in the country. Grants and funds should be earmarked for education, infrastructure building and for creating a viable marketplace in local communities throughout Uzbekistan. With the country being predominantly practicing islam (88% - reference 3), culturally appropriate messages, cuisines that utilizes local flavor, spice and ethnic preferences should be included for these efforts to be successful.

Change can also be sought locally within organizations who work to defeat the problem of food insecurity. Local food banks such as channel one already work towards making food accessible to people in struggling countries. I think this work could be scaled up by educating other countries on diets and healthy living options.

Many countries struggle with stereotypes and having to look a certain way. Another way of implicating change would be breaking those stereotypes and educating on fad diets.

The project would be sustainable and self-sufficient, if the grants and funds are earmarked by the central government for capacity building, reduction of reliance on pesticides, herbicides, fertilizers, and in creation of sustainable markets and for education of the population. Creative revenue streams could be initiated such as consumption taxes on sugary foods and beverages, and the revenues could be used to sustain the capacity creation in the country. Organizations such as the World Bank, not for profit organizations and non-government organizations could provide expertise and consultation to Uzbekistan to achieve the goals for a healthy nation where preventable deaths due to poor dietary habits are reduced.

Citations:

1. Staff, The Week. "The Countries with the Healthiest and Unhealthiest Diets." *The Week UK*, The Week, 4 Apr. 2019, <https://www.theweek.co.uk/100601/the-countries-with-the-healthiest-and-unhealthiest-diets-revealed>.
2. "Uzbekistan Energy Situation." *Energypedia*, [https://energypedia.info/wiki/Uzbekistan\\_Energy\\_Situation#:~:text=Uzbekistan%20is%20Central%20Asias%20most%20populous%20country%20with,GDP%20per%20capita%20in%202010%20was%201%2C400%20US%24](https://energypedia.info/wiki/Uzbekistan_Energy_Situation#:~:text=Uzbekistan%20is%20Central%20Asias%20most%20populous%20country%20with,GDP%20per%20capita%20in%202010%20was%201%2C400%20US%24).
3. "Uzbekistan Culture." *Central Intelligence Agency*, Central Intelligence Agency, <https://www.cia.gov/the-world-factbook/countries/uzbekistan/#:~:text=Land%20use%20agricultural%20land%3A%2062.6%25%20%282018%20est.%29%20arable,10.1%25%20%282018%20est.%29%20permanent%20crops%3A%200.8%25%20%282018%20est.%29>.
4. "Uzbekistan Geography." *CountryReports*, <https://www.countryreports.org/country/Uzbekistan/geography.htm>.
5. TheLancet. "The Lancet: Globally, 1 in 5 Deaths Are Associated with Poor Diet." *EurekaAlert!*, <https://www.eurekaalert.org/news-releases/494822>.
6. "Uzbek Food." *Advantour*, <https://www.advantour.com/uzbekistan/uzbek-food.htm>.
7. "Uzbekistan." *Countries and Their Cultures*, <https://www.everyculture.com/To-Z/Uzbekistan.html>.
8. "Unitary State." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., <https://www.britannica.com/topic/unitary-state>.

9. "Agriculture ." *Uzbekistan - Agriculture*,  
<http://countrystudies.us/uzbekistan/38.htm#:~:text=Because%20of%20this%20domination%2C%20average,production%20comes%20from%20irrigated%20land.&text=Uzbekistan's%20economy%20depends%20heavily%20on%20agricultural%20production.>
  
10. Hays, Jeffrey. "Bread, Melons and Food in Uzbekistan." *Facts and Details*,  
[https://factsanddetails.com/central-asia/Uzbekistan/sub8\\_3d/entry-4712.html](https://factsanddetails.com/central-asia/Uzbekistan/sub8_3d/entry-4712.html).
  
11. "Tashkent." *Teleport.org*, <https://teleport.org/cities/tashkent/salaries/>.
  
12. Project, Borgen. "Education in Uzbekistan." *The Borgen Project*, Borgen Project  
[https://Borgenproject.org/Wp-Content/Uploads/The\\_Borgen\\_Project\\_Logo\\_small.Jpg](https://Borgenproject.org/Wp-Content/Uploads/The_Borgen_Project_Logo_small.Jpg),  
17 July 2020, <https://borgenproject.org/education-uzbekistan/#:~:text=As%20the%20region's%20most%20populated,right%20to%20education%20in%20Uzbekistan.>
  
13. Hays, Jeffrey. "Families, Women and Children in Uzbekistan." *Facts and Details*,  
[https://factsanddetails.com/central-asia/Uzbekistan/sub8\\_3d/entry-4706.html](https://factsanddetails.com/central-asia/Uzbekistan/sub8_3d/entry-4706.html).
  
14. "Country Nutrition Profiles." *Global Nutrition Report | Country Nutrition Profiles - Global Nutrition Report*, <https://globalnutritionreport.org/resources/nutrition-profiles/asia/central-asia/uzbekistan/>.
  
15. "Is Uzbek Cuisine Actually to Die for?" *BBC Travel*, BBC,  
<https://www.bbc.com/travel/article/20191117-is-uzbek-cuisine-actually-to-die-for>.
  
16. Baah, Foster Osei, et al. "Marginalization: Conceptualizing Patient Vulnerabilities in the Framework of Social Determinants of Health-an Integrative Review." *Nursing Inquiry*, U.S. National Library of Medicine, Jan. 2019,  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342665/>.

17. Willett WC, Stampfer MJ (2013) Current evidence on healthy eating. Annu Rev Public Health. 2013; 34: 77-95