

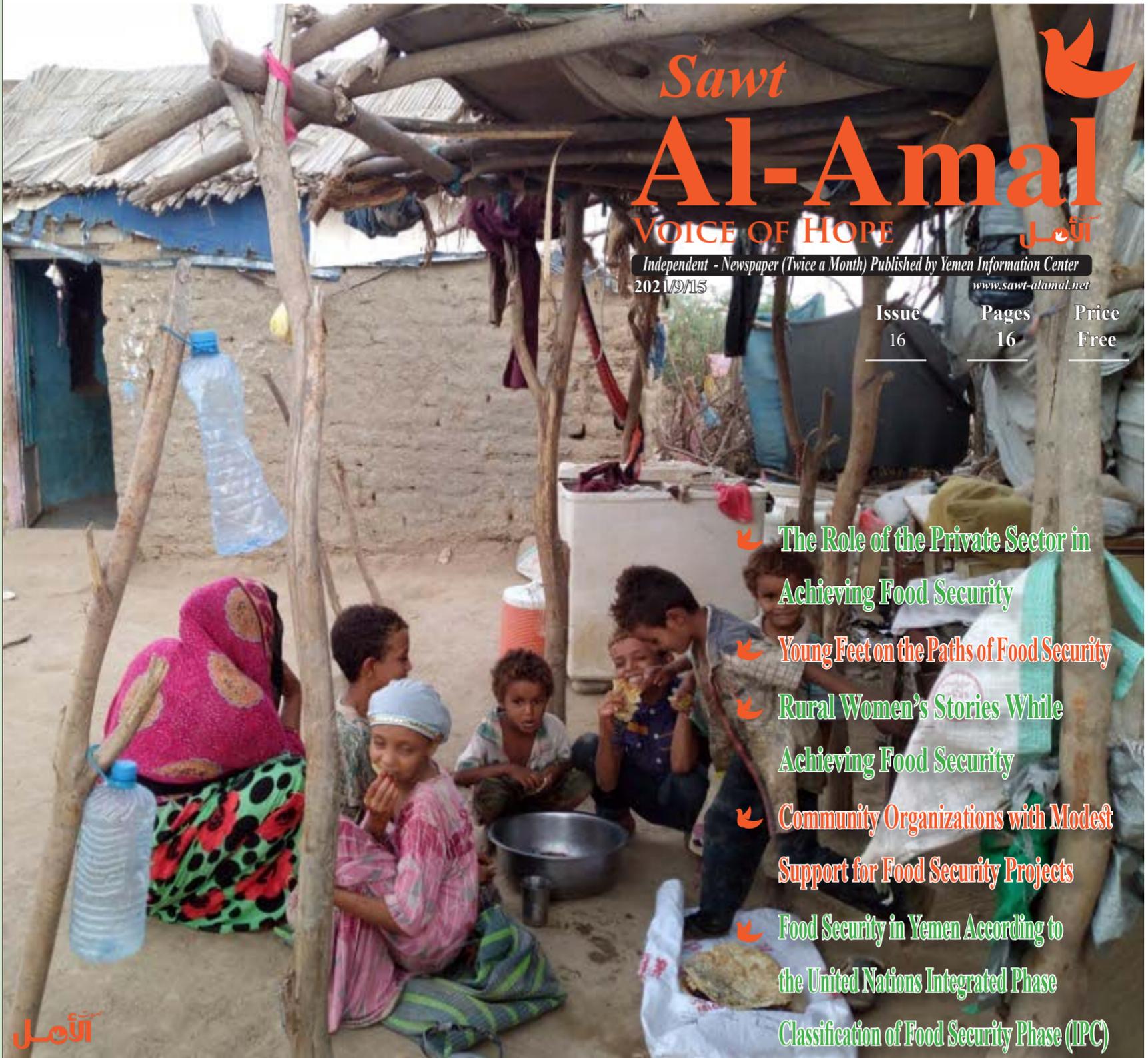
Food Security in Yemen

United Nations Warnings: Yemen is at the Beginning of the Last Stage of Food Insecurity!!

Food Security in Yemen Between Reality and Facing Challenges

Food Security in Numbers

- 16.2** million Yemenis are severely food insecure
- 2.3** million children under the age of five suffer from acute malnutrition
- 1.2** million pregnant and lactating women suffer from acute malnutrition
- 42%** of the population living below the poverty line
- 10%** of people living in developing regions and their families on less than \$1.90 a day
- 90%** grain is imported from abroad
- 17%** the rate of self-sufficiency in Yemen
- 3%** the percentage of cultivated land in the total area of Yemen
- 2 billion dollars,** the value of the grain that Yemen imports annually
- 4 million** Yemenis need treatment for malnutrition
- 5%** self-sufficiency rate of wheat
- 20.3%** the share of the agricultural sector in the GDP



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- 👉 The Role of the Private Sector in Achieving Food Security
- 👉 Young Feet on the Paths of Food Security
- 👉 Rural Women's Stories While Achieving Food Security
- 👉 Community Organizations with Modest Support for Food Security Projects
- 👉 Food Security in Yemen According to the United Nations Integrated Phase Classification of Food Security Phase (IPC)

Conflict in Yemen Creates the Worst Humanitarian Crisis in the World

Editorial

Food Security and the Future of the Food Gap in Yemen



Ahmed Al-Wahesh

Food insecurity is one of the most important threats to stability and security at the local, national, regional, and international levels. Because it falls within the national security of the countries. Food security is the first component of life, and the lack of it in the required manner for peoples leads to the creation of unrest, chaos, disruption of security, the emergence of famine among the population and the spread of diseases due to malnutrition. Therefore, it is the responsibility of governments and states to provide food to much of the population at prices commensurate with their income. The availability of food is one of the most important reasons for establishing security in society, and it is an indicator of the relationship and stability between governments and

their citizens.

With the increase in the population and the weak local agricultural production at the present time, the demand for the importance of food security is increasing as an entry point for stability, and human and social security. As food and its provision have become governed by the policies of many countries that have transformed some food commodities such as wheat and rice into strategic commodities that they use to serve their own goals and interests. Here lies the danger of the matter, as the great countries have become monopolizing most of the surplus agricultural and food production. So, it can be used as a weapon to serve their purposes whenever they want to, and the poor countries enter the quagmire of loans, including Yemen,

as is happening now. Therefore, all people in Yemen, the government, the farmers, and fishermen have to give all our material and human capabilities to unite and pay attention to the agricultural and fisheries sector to reach self-sufficiency in basic products such as grains, vegetables, and livestock in order to achieve food security and work to reduce the size of the food gap from 26.7% in 1990 to about 7.5% in 2018. This means that the agricultural product for one year, amounting to about 255 thousand tons is sufficient only for about 28 days, and the rest of the days of the year depend on agricultural imports imported from other countries. This is due to the high volume of consumption on food as a result of the increase in the population of Yemen, which was about 11

million people in 1990. The population increased to about 34 million people in 2020, then the consumption of wheat in Yemen increased from 1.88 million tons in the year 1990 to about 3.4 million tons in 2020, for this there is a possibility of making a vertical and horizontal expansion in the production of grain in Yemen and harnessing the available natural resources towards commodities with comparative advantage. As finally there has been a significant lack of productivity for many field crops, cash, and natural resources due to many factors. Changes in the global climate as a result of global warming in addition to floods and torrential rains, with a decrease in the productivity of local varieties,

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Rationalizing the Use of Water and its Role in Achieving Food Security

Using Modern Methods for Irrigation with Treated Wastewater

As the amount of water resources in Yemen decreases sharply, the need for alternative means and methods for irrigating agricultural lands has increased more than ever, using non-traditional methods such as saline water, treated sewage water, and sea water. Then, working on converting them into resources benefits the environment, farmers and contributes to achieve the goal of food security.

By: **Haneen Ahmed**
Voice of Hope

Dr. Amin Yahya Rajeh, the national expert in the field of water and the environment, explains the reasons behind the use of treated water to irrigate agricultural crops by some farmers. He reviews the treatment methods and the environmental and health reasons that result in the use of this method for irrigation. He added "Water-based treatments are an alternative that falls within Available water sources to relieve pressure based on fresh water, and to contribute to achieving an axis of food security, where wastewater is treated well, safe and sustainable, health and environmentally".

The continuous shortage that Yemen suffers from in providing water, this situation has been exacerbated further on both agriculture and food production, which depend on the irrigation process. Thus, on the process of achieving food security.

Rajeh explains that the proportion of wastewater in Yemen is estimated at about 73.8 million m³. According to the estimates of the Watershed Management Project 1999, and currently it is estimated at 150 million m³. As a result, the treatment process must be carried out by using scientific methods, as poor treatments and their use in wrong ways may cause huge environmental and health disasters.

Challenges

On the challenges facing the treatment process in a fast, more efficient, and healthy way, he says "The shortcomings and neglect of treatment plants in all Yemeni governorates, and the low quality of treated water which comes from treatment stations. As a result of the increased load from the amount of water entering the treatment station due to population growth in the cities, and the absence of operating management. Moreover, there are no specialists in charge of the treatment process, as well as the lack of equipment, devices, and modern laboratories, all of which contributed to the decline in the treatment process as required, and it needs a lot of work and

correction".

He added that the use of treated water for irrigation is currently carried out randomly without agricultural supervision, and failure to work within the scientific conditions and rules followed in the process of using wastewater for irrigation, which may cause health damage to humans, animals, and soil.

"The wastewater treatment system is carried out through oxidation ponds, which is the cheapest and most widespread system, especially in warm areas and with sufficient areas. There is also another method that relies on the mechanical treatment system, and this system is used in the governorates of Sana'a and Ibb. It depends on extended ventilation or active bacteria..." This is what the expert Amin Rajeh indicated.

Environmental Effects

He also explained that there are environmental and health effects that may occur during the random reuse of wastewater without considering the specifications and quality of the water, the quality of the lands targeted in the irrigation process, and the type of trees and crops that are irrigated with quantities of random treated water that may cause salinization of the lands. Its characteristics deteriorate and its needs are low, making it unsuitable for agriculture, due to the accumulation of salt and the spread of



many insects and diseases.

He added "the failure to use safety features during the irrigation process with this water leads to the spread of many health problems such as liver, bilharzia, typhoid and many bacterial, viral, parasitic and skin diseases among workers in this field and among farmers. This effect increases day after day when there is direct contact. Especially for the age group less than 14 years, and for the livestock.

Treatments and Recommendations

Environmental expert Amin Ragueh reviews several treatments and recommendations that contribute to limiting the spread of errors to maintain a good healthy environment and ensure the use of wastewater in the irrigation of agricultural lands. He said "the process of intensifying and strengthening aspects

of awareness about the need to preserve the environment and natural resources is one of the most important treatments that maintain human and animal health, as well as agricultural soil.

He stressed on the need to strengthen the role of institutions, groups, and individuals by highlighting practical instructions through the various media. Conducting field examinations to detect diseases resulting from pollution because of random dealing with water and working to quickly in expand treatment plants to accommodate more wastewater, which leads to improving the exit and cleanliness. The environment, and adherence to the accepted treatment method that ensures reducing health and environmental risks to a minimum and improving the quality of the outflowing water by reducing the level of salts in

wastewater. This leads to reducing the risks of soil salinization, and adherence to international standards for treatments according to the World Health Organization and local standards, which is less than 100-1000 ml.

Rajeh also stressed that it is necessary to monitor and control violators, determine the types of crops that are irrigated with sewage water, which ensure healthy productivity. Using the reciprocal method during the irrigation process, by irrigating crops with treated water in the winter and rain and torrential water in the summer to improve the properties of the soil, to wash salt accumulations, as well as to fertilize the soil with organic fertilizers for lands irrigated with this water. Instructing farmers to avoid sowing fodder and direct grazing of animals until 21 days later, which is a safety period.



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Food Security and the Future of the Food Gap in Yemen!!!

with an average productivity of about 1,750 tons / hectare. The local varieties are still planted in large areas, in addition to the farmers' weakness and adoption of the technology packages made by the Agricultural Research Authority and the Department of Improved Varieties

whose production exceeds more than 5.5 tons / hectare. Moreover, the lack of seeds approved for farmers by the Research Authority and the Foundation of the multiplication of seeds due to the current economic conditions and the suspension of financial allocations on them, as well as the high prices of fertilizers, their unavailability and its monopoly, in addition to the lack of financing support for farmers, in addition to the

lack of encouraging incentives for farmers such as purchasing production from the concerned authorities at prices that guarantee farmers benefit and encourage farmers and motivate them to continue working with production. The agricultural sector and not switching to qat cultivation, because there are indicators by which studies indicate a scheme directed by some grain-producing countries to allocate about 25% of their

production towards bioenergy production and other policies that threaten to create food shortages, which requires us to prepare for improving and developing the agricultural sector through supporting official government agencies and institutions to enable them to carry out their assigned role in achieving agricultural food security. Through this issue, many agricultural axes and issues that are directly and indirectly related

to reducing the food gap and reaching self-sufficiency will be addressed to achieve agricultural food security.

Therefore, we send a clear message to those concerned in the government, international organizations, and donors about the dangers of food insecurity on the various groups of the Yemeni people, especially those with low incomes.

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.....Continuation on page 2 Food Security in Yemen

The number of food insecure people reached 20.1 million (in case they did not receive humanitarian food assistance) and 15.9 million people (in case they did not receive humanitarian food assistance).

Malnutrition in Yemen represents one of the highest rates in the world. It has become an imminent danger that besieges millions of children and mothers and poses a threat to the future of human and economic development in the country. Approximately 7.4 million people need services to treat or prevent malnutrition; 3.2 million of them need treatment for acute malnutrition. Despite this low level of food security in Yemen during the previous decades up to the present time, the efforts of

successive governments were not up to the responsibility. Shortcomings, or more specifically the absence of integrative policies, prevailed among all economic sectors to address the problem of food security.

Despite the dependence on the agricultural sector for food production and despite its climatic diversity which in turn helps in the diversification in production, it has been characterized by poor performance due to natural factors represented in the limited amount of land under agricultural investment; the percentage of cultivated lands is estimated between 1.4 to 1.2 million hectares annually. The agricultural system is also characterized by the rain-fed system, which accounts for 50%. The system achieved self-sufficiency in vegetables, fruits and eggs, in addition to 95% of red meat. However, this sufficiency is apparent and not real in terms of the nu-

tritional dimension. Also, the increase in the production of vegetables and fruits was not due to the expansion of the reclamation of agricultural lands, but it happened at the expense of the shortage of agricultural areas for grains. Cereal production has been continuously decreasing in terms of cultivated areas and production. The self-sufficiency rate of wheat is only 5%. Besides the shortage of agricultural areas for grains, there are limited water resources, which is one of the main components of agriculture. The severity of the aggravation of food insecurity is also due to the great disparity between the increase in the population and the failure to meet the demand for food, whether from local production or from current imports. The war has also led to the displacement of millions of people from their homes. For this, they are suffering more difficult conditions, including the loss of ac-

cess to food and livelihood, not to mention the incidence of epidemics and food insecurity.

The decline in the ability to provide food in Yemen is due to many economic factors such as the absence of an actual political orientation to study the phenomenon of food scarcity and thus find solutions to prevent the exacerbation of the crisis, the deterioration of the price of the national currency and its repercussions on the increase in price, which escalated to about 120%, the halting of oil revenues, and the bulk of which was harnessed to import food.

The inability to obtain food is attributed to the widespread of poverty, high unemployment rates, lack of job opportunities, absence of social protection systems, and interruption of salaries, which created a lack of purchasing power.

In light of what stated, facts indicate that the problem of food insecurity in Yemen will

continue to escalate further unless improving the current conditions in the country, reaching a comprehensive political settlement, ensuring paying the salaries of state employees, settling the dispute over the mechanisms for importing fuel and food commodities in general, resuming the export of oil, gas and agricultural commodities, adopting an objective and realistic future strategy to confront the reduction of food shortage- starts from a realistic analysis of the agricultural sector and the possibilities for its development and raising its production capacity through horizontal and vertical expansion- paying attention to encouraging the establishment of agricultural cooperative societies, and limiting the deterioration of water sources. Finally, if food security situation is not taken into account with all its economic, social and health implications, its impact and damage will be catastrophic in

The Private Sector and Industries... Hopes for Achieving Food Security

Alia'a Mohammed
Voice of Hope

Local demands for food are increasing very dramatically considering population growth, which requires the provision of procedures, mechanisms and institutional investments that contribute to achieving food security, and help supply the local market to provide safe, stable, and healthy food. The food industry is one of the most important means to achieve this. As a result of the importance of its role in satisfying the consumer and food needs of the individual and society. According to a report issued by the Technical Secretariat for Food Security of the Food and Agriculture Organization (FAO) in January 2021 the volume of imports of various food commodities and humanitarian aid that were imported during the year 2020 AD through sea and land ports reached 5,286,794 tons, that is to say 88% Commercial and 12% humanitarian aid. Wheat grains recorded the highest percentage, estimated at 51%, followed by sugar 21%, flour, 10.8% for wheat, 9% for rice, 5.6% for cooking oil, and the least for milk and its products.

Abdul-Hakim Al-Afairi (an expert in strategic management) believes that industries in our country focus on specific types of food, the most important of which are: wheat, flour, dairy, ghee, oils, and biscuits, and all the effort is spent on them only. He stressed that the private and industrial sectors have not yet reached a clear strategy that contributes to the protection and settlement of local products.

He added Yemen has not yet reached advanced stages of investment in the food sectors. For example, we in the fish sector have not reached 10% of the volume of manufacturing. Unfortunately, this is happened because, there is no strong



infrastructure for protection, fishing, canning and other operations. This also applies to other sectors. The agricultural sector needs water resources, protection, and expansion of lands. The lands have been greatly affected by the urban sprawl in villages because of qat cultivation. The animal sector in Yemen needs medical care and females' protection from slaughter, as well as the expansion of providing a suitable environment for raising animals and benefiting from their wealth.

Al-Afairi explained that there is a great

confusion between the concept of food industries and manufacturing industries. In Yemen, we do not have food industries except for the fish canning industry in Hadramout Governorate. As for the rest of the industries, they are called transformative, and by this we mean importing materials from abroad and then mixing them to obtain a product. There is no doubt that there are several factories that open, pay taxes and employ manpower, but at the same time we find a number of products imported from abroad that have

affected the competitive situation.

Food Sector Challenges

In a statement by Muhammad Ali Mujam (adviser to the Director of Agriculture for Planning Affairs) to "Voice of Hope", said "The existing conflict has had a significant impact on a number of factors that contribute to moving the agricultural sector, the most important of which are oil derivatives, which led to the weakness of various production processes in the agricultural sector. The emergence of new challenges, the most important of which is the scarcity of providing approved government budgets to carry out the necessary agricultural activities, and the fear of investors from investing in the agricultural sector due to the inappropriateness of some agricultural regulations and laws to the current situation. In addition to the leakage of staff as a result of stopping the payment of salaries in a regular manner and the lack of coordination with the relevant authorities to implement some Agricultural projects".

In the same context, Yeslam Babalgom (Chairman of the Fisheries Authority) stressed on that "the fish industry plays an important role in supporting the national economy by producing value-added products and exporting them to global markets, which contributes to obtaining a large financial return that achieves the required food security".

He clarified a number of challenges facing the fish sector, represented in the relative decline in fish production; Because of the use of very traditional fishing methods that cause great pressure on coastal fisheries, which leads to wasting fish wealth in the depths, the collapse of the Yemeni currency against other currencies, and this negatively affected the fish sector. Another challenge is the increased demand for fish by neighboring countries, taking advantage of the currency differ-

ence Which led to a lack of adequate number of fish in the market.

Solutions and Treatments

Regarding the most important treatments to attract investments that achieve food security, Mujam said "Some regulations and laws must be amended to protect investors, in addition to establishing central markets and factories for the manufacture of agricultural fertilizers and modern irrigation networks and providing incentives and facilities for the continuation of the investment process."

Babalgom stressed on the importance of a coordination process between the Ministry of Agriculture, Irrigation and Fisheries with the Ministry of Finance represented by the Customs Authority, to contribute to facilitating the process of importing fish for the purpose of introducing them into the fish industries and producing value-added products that are re-exported abroad, to supplement the national economy, which in turn will contribute to achieving food security in the country.

He added "We must strive to achieve the most important goal of the Ministry of Agriculture, Irrigation and Fisheries, which is to achieve local fish food security Based on this goal, we must work on regulating fish exports to ensure nutrition for local markets and provide local food security."

From his part, Al-Jaafari stressed on the importance of the government, the private sector and other sectors brought together on a comprehensive national investment program to come up with a national strategy, to achieve food security and self-sufficiency by paying attention to the food sectors, encouraging, and supporting local products and providing a suitable working environment for the production sector, which contributes to increasing exports and increasing local production.

Attempts to Achieve Self-Sufficiency Under the Poor Food Security

"Yemen is among the poor countries that suffer from high levels of food insecurity in the world, which still depends on import. Purchase from international markets to more than 90% of the grain (40% wheat)." According to the Yemeni economic expert Dr. Hussein Al-Ahdal.

By Mohammed Abdulaziz
Voice of Hope

In his scientific study on "Towards achieving food security and self-sufficiency in Yemen" Al-Ahdal stressed that it is necessary to work together to reduce the process of external import of food, to avoid any possible risks associated with fluctuation in international food prices, and to reduce import costs and currency differential. In order to strengthen the local production.

Self-Sufficiency Rate

The study, published in 2021, pointed out that in general, the self-sufficiency of a country is measured through the proportion of national production of all food compared to the total internal consumption (production + exports+ imports+ food aid), if it comes to the rate of total or complete food self-sufficiency. The partial or sectoral self-sufficiency rate can be measured through the percentage of the national production of a particular type of food (cereals, vegetables, fruits, etc.) compared to the total

consumption of these foods.

Noting that the most prominent agricultural crops in Yemen are millet, corn, wheat, mango, bananas, papaya, melons, pomegranates, oranges, lemons, pears, apples, peaches, grapes, and coffee.

The study also showed that Yemen is one of the countries with a very weak self-sufficiency at 17%. Especially for grain and starch crops, which means that Yemen is not able to feed its population except by relying on abroad. On the other hand, our country has good self-sufficiency in vegetables and fruits at a rate of up to 90%, which reflects the need to change the state's policies and programs to enhance economic efficiency. Promoting the principle of self-sufficiency in grains and major crops to be equal between vegetables and fruits.

Decline in the Agricultural Sector

The agricultural sector in Yemen can help reduce poverty in large proportions, contribute to raising per capita income levels. It helps the process of achieving food security to improve 80%

of the poor in Yemen who live in rural areas, representing more than 60% of the poor. The population of Yemen, and most of them work in agriculture.

However, the value added in the agricultural sector of the GDP declined from 25% in 1990 to approximately 6% in 2019. This is considered a very serious deterioration, as the percentage of arable land in Yemen is approximately 3% of the area of Yemen, and the percentage of agricultural land Exploited in the cultivation of permanent crops, only half of the total land in Yemen. According to a study by Dr. Al-Ahdal.

The area of land producing grains is only about 700,000 hectares in 2017, after it was more than 1,300,000 hectares in 1976.

The study estimated the total value of Yemen's imports of grains at more than two billion dollars, for a quantity of about 3 and a half million tons of grains annually. Wheat representing 40% of the imported products, and 37% of food and industrial materials, while agricultural items such as legumes and others represented 10%. The number of imported agricultural items reached 896, which represents 90% of the agricultural needs, although Yemen is an agricultural country and has a history in this aspect.

Solutions and Treatments

The study confirmed that "Our country has been suffering for more than six years from a deterioration that includes

all sectors and levels due to the ongoing conflict, which requires it to work seriously to reach self-sufficiency as one of the components of national security..."

It also indicated, the importance of searching for causes to be avoided in the future, regarding achieving food security, which are the weak agricultural production in Yemen, urban expansion at the expense of agricultural lands, scarcity of water resources, indiscriminate use of fertilizers and pesticides and lack of interest in the original seeds, neglecting agricultural institutions' support for small farmers, in addition to not adopting an agricultural development policy and moving towards self-sufficiency.

There are government endeavors during the current stage aimed at seeking to achieve self-sufficiency in food during the coming periods, by paying attention to the agricultural sector as required, and encouraging the local product by focusing on the implementation of a series of programs and projects for the agricultural sector plan for the year 2021 within the framework of the national vision.

Dr. Al-Ahdal, in his study, recommended the importance of enhancing the aspect of food self-sufficiency that is directly proportional to the development of agricultural resources in the country, reducing dependence on agricultural imports, and using them efficiently and productively, through the following:

-Improving crop and water productiv-

ity and irrigation efficiency.

Reducing post-harvest losses.

-The development of water resources management policies and modern irrigation techniques in agriculture at the local level is a priority for consideration and action.

-Strengthening government cooperation represented by the Ministry of Agriculture and the Investment Authority with the private sector to improve the added value in the food production chain.

-The study highlighted the importance of developing the food value chain in Yemen, which targets, as a first stage, important products such as: (coffee, almonds, grapes, mango, dates, livestock and a variety of fruits, vegetables, and grains such as wheat), by adopting comprehensive policies and procedures aimed at creating and developing frameworks supporting value chains. Food (inputs: seeds, nurseries, harvesting, collection, and outputs: marketing, local markets and export).

-One of the most important future plans illustrated by the study is to increase investments in local agricultural and food value chains, by supporting small and medium enterprises that will contribute to achieving significant economic and social benefits not only by ensuring greater food availability and achieving food security, but also by improving access to food, its stability and use, improve quality and safety.



The Seeds...

The Conflict Destroyed Many Items... Wasting Efforts of Years in Multiplication... The Role of Institutions in the Resumption

"It is not a thunderbolt from the sky, nor a technical failure in the energy... Rather, it is a strike caused by the conflict in the research station in Tihama that destroyed the efforts of the past fifty years. Destroying the administration building, everything in stores and laboratories, and many types of seeds. If there were not varieties (100-300 grams) preserved in refrigerators in (the National Center for Genetic Resources in Dhamar), the efforts of years and millions were wasted. According to Engineer Ali Abdel-Mugni (a technical director and field crops specialist, the Public Authority for Agricultural Research and Extension



By: Raja Moukard – Samah Emlaq
Voice of hope

Abdul-Mugni said "The Agricultural Research Station in Sardoud - Al-Kadan in Tihama is concerned with studying the agricultural situation in Tihama as a whole. There are research stations in different regions of Yemen. The authority produces studies and research to produce high-yield varieties and secure the farmers' need for excellent improved seeds that suit the Yemeni environment. We import varieties from abroad or we conduct experiments for them, the best of the seeds that we reach we send to the farmer - not randomly - there are other parties that receive this type, for example: the station worked on Shami seeds and fine seeds, and after four to five years of experiments, it is delivered only to (The General Organization for Improved Seed Multiplication). It is the headquartered in Dhamar and has a branch in Tihama. We hand them from one to five kilos. Then the authority multiplies it in large quantities and sells it to farmers, and they have a specific mechanism to work in this aspect.

Random

Ali Abdel-Mugni added "In the research organization in Tihama, we had about four excellent varieties of maize: Tihama 1, Tihama 2, Tihama 3, many varieties of millet, and fine seeds were launched by the research station, but were destroyed due to the conflict.

He stressed "The organizations worked in the humanitarian aspect in previous periods, when they were looking for excellent and high-yield varieties that are supposed to reach farmers and raise production for them, they did not find them, because the seeds are not present in the commission. The commission lost employees, engineers and researchers due to the lack of a budget or employment in the sector, and the lack of salaries for the working sector. Some of them traveled to their areas in Al-Qubaita and Al-Abos and settled there. The commission also lost many trees, crops, and seeds.

He elaborated, 2016 was the stage of the organizations' activity, there were many problems in agricultural production, due to the mixing of seed varieties. For example, they took seeds from Tihama and sent them to Taiz and Raymah to distributed them in Al-Wazi'iyah. The seeds were moved from one area to another in a random manner, and these seeds caused problems for farmers. The reasons for the randomness of the organizations are either due to the poor selection of engineers, or because they tender with traders, take seeds from commercial markets, the seeds are mixed, and some of them are weak or may be infected. The station produces seeds and delivers them to the Seed Multiplication Authority and distributes them to farmers. There is no random job from - the organizations - according to his comment.

The Difference Between Local Seeds and Provided by Organizations

Engineer Abdul Azim Ismail (Deputy Director General of the Agriculture and Irrigation Office - Hajjah) told "Voice of Hope" about the difference between local seeds and

those provided by organizations "The seeds provided by the organizations are mainly local seeds, as there were tenders, and the organizations took them from traders and not through The Foundation for Seed Multiplication in Dhamar. Finally, this caused a confusion between the seeds and their distribution to different environments in Yemen, which made them not compatible with the environment. We find that many agricultural areas have gone out of production, such as Hajjah and three districts in Tihama due to mines caused by the conflict".

Engineer Abdul-Mugni (a field crop specialist) follows by saying there is a difference between the production of local and improved seeds. Local seeds are produced for local varieties, but improved varieties are foreign varieties that have been studied and the best ones selected. Five or ten varieties are entered, and the best ones are selected after four years for research studies at the farmer's fields research farm. Seeds provided by international organizations are local seeds but have a high mixing rate. A research study in the research farm in the farmers' fields. As for the seeds provided by international organizations, they are local seeds, but they have a high mixing ratio. In relation to the local seeds, the multiplier (the process of multiplication) is not an official body, but rather a farmer.

As humanitarian needs continue to rise, and hunger worsens in Yemen. The joint work of the Food and Agriculture Organization of the United Nations, the United Nations Development Program and the World Food Program has provided the World Bank financial grant in a joint project with a total cost of 127 million dollars during the month of July 2021. Which would provide opportunities to build sustainable food security for rural families in Yemen, according to the official websites of the FAO, the World Bank and the United Nations.

Improved Seeds and Farmers' Experiences

Farmers who used improved seeds doubled their yields, producing enough beans to feed more than 450,000 families, according to a study, in 2019, published by the Food and Agriculture Organization (FAO).

Abdullah Ahmed Saleh (a farmer from Ibb Governorate) "Improved seeds have a great benefit in achieving food security, in terms of improving the quality and quantity of production and reducing costs. Some studies, experiments and agricultural experiences have proven that improved seeds are abundant and prolific, and they do not cost Farms spend large amounts of irrigation water or expensive fertilizers. The improved seed trees are stronger than others to resist frost waves. So, all improved seed crops of all kinds at the level of all valleys of the Republic of Yemen in general and at the level of Ibb governorate in particular.

For the agricultural guide, Nohad Mustafa Al-Bahr from Taiz, she explains her experience with growing potatoes. She said "We find - for example that a bag of improved seeds for potatoes produces 11 bags of potatoes when harvesting the fruits, and on the contrary, we find that one bag of unimproved seeds produces only three or four bags, and

here we find that improved seeds have an advantage in terms of production quality, its quantity, and cost. As a result, this experience is agreed upon among farmers."

Research Bodies

Research centers in universities play an important role in achieving food security; By aligning reality and ambition in their plans and scientific publications, local community organizations should play a role in achieving food security by focusing on the economic empowerment of citizens, especially active groups such as youth and women, as indicated by researcher Fathia Bahran.

Bahran added: "The crisis must be dealt with within the framework of the existing conditions and focus on the role of the United Nations organizations and with the two governments in providing relief aid and implementing development programs to enhance the resilience of the population and support their livelihoods in parallel with relief aid according to what is available."

As for the role of the research authority, Ali Abdel-Mugni (Technical Director of the General Authority for Agricultural Research and Extension - Tihama Branch, from 2016) said "The authority does not have any research programs or research reports for any work, from this year 2021, the authority started doing the work that was working Previously (restarted) 2014-2015 (the Commission has a plan to continuously reproduce the lost items inside the research station).

He added "The first work in seed multiplication in Tihama was in 2019, approximately 100 grams, and we get five - seven kilos of each variety, some of the varieties that we lost in the conflict did not find for multiplication. In the second year, the seeds we obtained from the year before, we started multiplying them and we have obtained about three or four tons for a contract program with the General Organization for the Development and Production of Grains. We have produced good quantities. Currently, in 2021, these seeds will be delivered to the General Organization for Reproduction and Development of Improved Seeds in Dhamar with an official festival. The Foundation will multiply the seeds on large and wide areas; To provide farmers with a greater percentage in the coming year. This the program is done by the authority.

Organic Foods

Professor of Food Science at Ibb University Dr. Qais Najim said to "Voice of Hope" "Organic foods are the result of organic farming that is free from the use of any pesticides, improvers or chemical hormones. It grows in a clean environment. Its price is higher compared to non-organic foods, and organic farming is possible in most of the farms of the Republic of Yemen due to the high cost of compounds Chemicals that the poor farmer is unable to provide".

Dr. Qais Njeim encourages the way agricultural reserves work. Because it is secured and fast in producing at the same time. It's also indicates the widespread food gap due to the weak national stock of cereals and agricultural crops currently. After Yemen's production of wheat was 100% sufficient,



Mohammed Abdo Ali
Director of quality management in the organization

but the migration of the population from the countryside to the capitals of cities. The urban encroachment on agricultural lands, as well as the tendency of farmers to plant other crops such as qat instead of grain. This led to a local deficit, which made Yemen turned to importing enough wheat and other agricultural crops, especially rice.

As a result of the above, Njeim says: "Food security achieves national security, and the competent authorities are supposed to give great importance to agriculture in general and safe organic agriculture in particular, which reduce long-term risks and contribute to achieving food security. As a matter of professional and national duty, the concerned authorities should work for agricultural development and should have the sense of responsibility.

The roles of the Competent Authorities

The first step for government institutions was to create cooperatives that would bring farmers together under the umbrellas of seed producers' associations. Its formation not only made farmers more qualified and trained, but also gave them a unified voice in confronting the authorities responsible for the seeds and demanding support, according to Mufid Al-Haj (a member of the Siani Farmers' Cooperative Association in Ibb).

Mofeed added "that the state must prepare comprehensive and long-term strategic plans and provide a strategic stock of food and grains by encouraging the private sector to continue production. Even regular import of foods that our country lacks. As well as developing and building modern silos for grain with better storage capacities than what is currently available. In order to overcome the humanitarian crisis in Yemen and achieve sufficiency and food security.

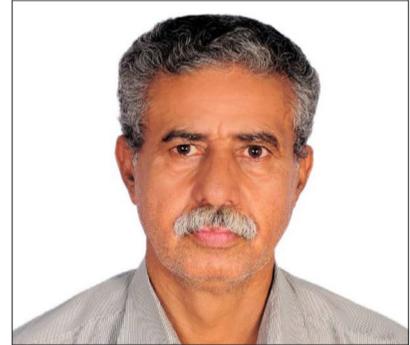
As Eng. Abdul Azim Ismail (Deputy Director General of the Agriculture and Irrigation Office - Hajjah) said "The Ministry of Agriculture and Irrigation in every rainy season works to motivate the local community in the districts and exploit the seasons to serve the farmers, and that there is a (tillage unit) present at the level of each district. This unit provides tillers for farmers.

He emphasized that the number of plows provided by the unit in each district ranges from 20 to 60 plows, depending on the area of the unit, and the unit provides fuel. The unit provides fuel at a reduced price. If the price of tillage per hour is YR 10,000, the Unit provides it at Y.R 8,000.

Regarding the role of (Food Research Center and Post-Harvest Technologies), Engineer Abdel-Mugni (Technical Director of the General Authority for Agricultural Research and Extension - Tihama) said "The center has produced in previous years the techniques of compound flour, where it worked not to rely on wheat flour to produce bread or roti, but rather worked on conducting studies (adding sorghum in certain proportions up to 25%, and the roti is not affected by viscosity - the compound flour technique - now the government and the ministry have begun to take this technology and apply it in bakeries. This technology is continuing. This is a great achievement - according to his description - for (Post-Harvest Research Center) and obtained results that instead of making the roti 100% wheat, 75% white wheat and 25% red wheat.

On the role of the General Organization for Seed Production - Dhamar, "Voice of Hope" met with Muhammad Abdo Ali (Director of Quality Department at the Corporation) and he answered the newspaper's inquiries as follows:

How are seeds produced?



Engineer/ Ali Abdel-Mugni
Technical Director at the General Authority for Agricultural Research and Extension - Tahama Branch



Dr. Kais Njeim
Nutrition Specialist

Of course, most of the varieties that the Foundation produces for its seeds are improved varieties that have been improved by the Agricultural Research Center, and introduced from regional and international research centers, not local varieties. Local seeds when the varieties are local only, such as sorghum, yellow corn are very rare or local Arabic Wheat. As it is not produced by the institution but by the farmer himself.

How do seeds contribute to achieving food security?

Food security is achieved by paying attention to the farms and encouraging farmers to produce local seeds by scientific methods, providing some of the necessary techniques for seed production, and training farmers who are interested in seed production and have the material potential for production. Because what the Seed Foundation produces does not cover more than 10% of the annual needs of seeds, while 90% of it is produced by farms using traditional methods.

How would you evaluate the role of the agricultural cooperative union?

The role of the Cooperative Union in the field of seed production is almost non-existent, despite its previous involvement by the rain-fed project or the Social Fund in the formation of associations of seed producers in five governorates targeted by the Fund (Sana'a, Al-Mahwit, Al-Hodeidah, Hajjah, Lahj), and that was with the knowledge of the engineer Ahmad Haidar. The necessary capabilities for seed production were given from stores, sifting machine, study and plowing until 2013. But those associations that also include groups of seed producers remained without any activity, and their role in improving the production of seeds of local varieties was neglected and contributing to achieving food security and spreading improved seeds in those cities. We hope that the Cooperative Union will activate the role of these associations at the present time.

What solutions to improve agricultural production?

To improve agricultural production, attention must be paid to improving and disseminating the seeds of local varieties that are suitable for each region. Providing agricultural inputs at reasonable prices and preferably locally manufactured, directing the private sector to invest in this aspect, conserving water and rationing irrigation through the use of modern irrigation techniques, encouraging the construction of dams and water barriers at the level of the Yemeni countryside, as well as small tanks for farmers using water gathering technology and using them to meet their water needs. And the production of its requirements of vegetable and legume crops at the level of the family or the local market, and attention to local markets to market local agricultural products at the level of the village or district.

Water Rationalization...

A step to preserve agriculture crops and contribute to building food security

“ The process of rationalizing water constitutes an important step in achieving food security in Yemen. As it is currently facing a major challenge represented in the absence and low level of awareness of individuals, and the lack of guidance in consumption during the process of irrigating agricultural crops.

Water rationalization has benefits that accrue to agricultural crops and achieve food security in the country. There are difficulties facing the water sector during agriculture. The difficulties are represented in how to apply modern irrigation techniques to save water and water guidance.

Haneen Ahmed
Voice of Hope

Raed Al-Omrani (Irrigation engineer in the Agriculture and Irrigation Office - Taiz) said “the rationalization of water use in agricultural lands is done by changing the traditional irrigation pattern to use the modern irrigation methods represented in drip irrigation for cash crops such as: (vegetables, coffee, fruit crops), Which modern irrigation systems add the right amounts of water to the planted crop at the right time.

Adding, that if these systems are designed correctly, crop production costs will be saved by up to 50%. That is to say, when irrigating agricultural crops that consume a large amount of water (vegetables, bananas, and cucurbits) using modern irrigation methods, the one hectare needs 4000 cubic meters of water, but when using traditional irrigation methods (flood irrigation) we need 7000 cubic meters. Comparing between the two ways and measuring water, fuel, labor, and pesticides for each.

Al-Omrani asserts that the methods used in the irrigation process is the traditional method, which is mostly through pumping large amounts of water to irrigate the cultivated crop more than its need. This way is the worst common method used by farmers because it raises crop production costs. By the high amount of fuel used to pump water to the field, and the high labor costs needed by the farmer. To work in the field and to maintain the traditional irrigation canals.

Problems of the Sector of Water

Al-Omrani explains that there are many problems facing the water sector in agriculture. These difficulties are represented in the difficulty of convincing farmers to use modern and highly efficient agricultural irrigation systems (drip irrigation systems - pipe water transport systems). As opposed to the use of large quantities of water when irrigating with floods which threatens the rapid depletion of groundwater at an alarming rate. Therefore, it is necessary to facilitate those concerned with conserving groundwater, in imposing the necessary solutions to reduce the depletion of groundwater and rationalize its use by adopting modern irrigation methods and facilitating its access to farmers at the lowest costs.

From his side, Engineer Khaled Al-Shuja, (Director General of the Water Resources Authority – Taiz) said that in order to rationalize water consumption in agricultural lands, farmers must be made aware of the importance of water, the problems arising from the wrong use of water, and ways to benefit from all available awareness means, working with farmers and authorities relevant to the principle of community participation in water, participation in the management, planning and regulation of water through the establishment of agricultural water user associations and groups, and encouraging farmers to grow crops with low



water consumption and economic feasibility for farmers.

He pointed out that one of the most important problems facing this sector is the indiscriminate drilling and pumping of wells without taking any legal measures to reduce it, the expansion of the cultivation of the qat crop at the expense of fertile agricultural lands with economic feasibility, the absence of a clear agricultural policy, and the dependence of the agricultural sector on groundwater. Mainly, the lack of use of wastewater, the absence and low awareness of water and agriculture. Even the use of old irrigation systems.

Production Quality

The quality of crops varies according to the different methods used to produce the crop. This is what specialists in this field explain. According to (Abu Bakr Al-Hakim: Director General of Quality in the Ministry of Agriculture and Irrigation - Sana'a previously), the quality of crops varies according to the different methods used during cultivation and irrigation methods. Among the factors Which helps to increase the quality of production, the use of various agricultural techniques such as: improved seeds, irrigation by modern irrigation systems, the use of natural organic fertilizers, pest control, organic pesticides, and agricultural machinery, all of these techniques contribute to increasing the quality of production from the same unit area and water.

In the same context, Ghassan Al-Maqtari the (Director General of the Center for Food Research and Post-Harvest Technologies - Aden) explains that, among the factors that affect the volume of quality, production, variety and type are factors that are due to the methods used in preparing the land represented in (type of fertilizer, soil, seed quality, irrigation method used in agricultural lands and other factors).

Commenting, “the hybrid varieties (seeds that include a new generation of plants bearing the characteristics of indigenous plants) are grown in greenhouses and not in open fields. It gives high production for once.”

Drip Irrigation Experience

As Abdul Salam al-Qudsi, (the Director of the Coffee Department at the Ministry of Agriculture and Irrigation in Taiz) said” Many farmers in the villages of Taiz use modern techniques in the spraying process to obtain quality crops, represented in the use of drip irrigation, and the use of agricultural mulch “made of agricultural plastic -Nylon- ” which aims to imitate the natural by preserving moisture and raising the temperature of the soil, and following the ring schools’ program, to obtain agricultural crops of high quality and of great importance. The process of maintaining the quality of the crop is also done through continuous follow-up from the beginning of the cultivation process until the end of the harvest process and marketing.

Saddam Ali, a farmer from Lahij, owns a vegetable farm telling the methods he uses to irrigate his crops using drip irrigation. He tells his experience with drip irrigation, that after he followed this method, he found that the result of the crop is better and higher quality in many respects, as the water is distributed in equal proportions between the crops, and the easy process of applying fertilizers are used, and thus we have worked to conserve water and contribute to achieving food security.

Water guidance with an economic vision
Dr. Ali Mogaheish, a national expert in

the field of economic and social studies, on his vision of the economic dimensions of the role of rationalization and consumption in achieving food security, he clarifies that in a study conducted in 2018 by the Central Bureau of Statistics, it was found that 991073147 cubic meters of water can be saved in the case of rationalization Water consumption, which covers an area of about 130,000 hectares that are planted with crops and could contribute to bridging the food gap.

Certainly, the rational use of the water resource is the basis for development, especially since the country is considered one of the scarce countries, so achieving food security depends on the survival of (water security).

Professor Dr. Muhammad Yahya Al-Rafiq,(President of Dhamar University and Doctor of Administrative Sciences) explains, that although Yemen possesses many

water resources (traditional - surface - underground), they are considered insufficient due to the lack of rational exploitation of them, and the lack of awareness of irrigation methods and consequently, a large amount of agricultural resources, inputs and water is wasted due to wrong irrigation, which may cause a large water gap, affect the agricultural process and achieve water and food security, and create distortions and imbalances in the national economy.

He added that it is necessary to control water, organize its affairs, prevent its exploitation by some owners of agricultural lands, preserve water resources, evaluate the performance of dams, establish others according to the order of their priority and feasibility. While raising the efficiency of the existing uses of them and giving priority to agricultural projects aimed at rationalizing water consumption and increase production efficiency.





The Agricultural Sector and the Strategy for Achieving Food Security

The agricultural sector is one of the most important productive sectors driving the economy of every country, as it makes an effective contribution to achieving food security and achieving the greatest degree of self-sufficiency in food products. To learn more about this sector, we had a meeting with the expert and academic in agricultural economics and strategic planning, Dr. Muhammad Abdullah Al-Hamiri.

By: Alia'a Mohammed
Voice of Hope

Doctor, first of all, what is the role of the agriculture sector in achieving food security?

The agricultural sector has a pivotal and vital role in supporting food security in Yemen, by moving the wheel of the economy in general, as it is a sector that deals with the largest geographical and population scope in the Republic. The population of the country, whether those who live in the countryside and constitute the majority, or those who live in cities and urban areas, especially those who work in marketing and agricultural trade activities.

In the light of the challenges facing food security in Yemen, what are the best ways to deal with the agricultural sector?

This important sector must be dealt with according to a new investment strategy commensurate with the economic and future importance on one hand, and the current security importance on the other hand. To obtain a qualitative, effective and practical strategy that focuses on the most important activities of this sector with a monetary methodology that raises

the degree of adequacy of the investment of resources and the huge potentials used in this vital and important sector, which is supposed to operate the production, marketing, manufacturing and export aspects of local agricultural products, development of the base of production services and investment in the agricultural sector, especially in the countryside; To achieve more vertical and horizontal development in spaces and in various production and marketing capacities.

Is there a joint national strategy for developing productive capacities?

There are many previously drawn visions for the development of agricultural production, and these visions must be based on an effective, productive, economic and marketing approach that achieves future alignment between the various strategies and policies in the various main productive components of the economy in the sectors (agricultural, fishery, industrial, commercial, tourism and service) with the aim of facilitating the issue of implementing the executive mechanism for each of these plans and ensuring that the performance of these five main sectors does not conflict.

How do you think this strategy is implemented?

First, we must consider the compo-

nents of services devoted to developing the agricultural sector and achieving rural growth in the country through regular evaluation processes, and periodic follow-ups to reach an appropriate agricultural service environment or the so-called business incubators in the agricultural sector.

Therefore, we need to implement national, governmental, cooperative and private institutional projects and programs that guarantee the continuity of support and enhancement of agricultural production and marketing capacities, and achieve sufficiency and optimal utilization of the available support resources, whether in the Agricultural and Fisheries Production Promotion Fund, or with other development funds, projects and institutions, represented by: The Agricultural Research Authority, the Tihama Development Authority in T, the General Organization for Seed Reproduction, the General Corporation for the Development and Production of Grain, the General Corporation for Agricultural Services, the General Company for Potato Production, the Agricultural and Fish Production Promotion Fund, the Cooperative and Agricultural Credit Bank, and agriculture and irrigation offices in various governorates, and in the rest of the country. Components or agricultural projects that are affiliated with the Ministry.

What are the most important challenges facing the agricultural sector in the country?

There are a number of weakness factors that our country could not get rid of previously, so what about the situations we are going through now that have caused a widening gap between the needs of agricultural producers and the ability to respond to them by the existing agricultural institutions, so that we find ourselves fac-



Dr. Muhammad Abdullah Al-Humairi
Expert and academic in agricultural economics and strategic planning

ing additional major present and future challenges, the most important of which is the limited water And suitable and reclaimed arable lands, and competition in prices and quality of foreign products on the one hand, and on the other hand, the weakness of basic domestic production and investment capacities, skilled labor and limited investments directed to the agricultural sector, which must double in quantity and quality to serve this import-

ant sector.

How can we face these challenges?

At the outset, we must stand with responsibility and firmness based on a comprehensive evaluation review, and this review should extend to accommodate the totality of the current and previous situations and challenges, in addition to harnessing all available energies to raise the production and marketing capabilities of the agricultural sector, through improving the management process and exploiting agricultural natural, material and human resources at the level and form that can be relying on it in the development and development of many major agricultural crops for food security, including cereal crops, legumes and oil crops, as well as some fruit crops and cash crops of high quality and international and historical fame, such as coffee, honey, raisins and Yemeni grapes of all kinds and features.

Add to this the important vegetable and fruit crops that currently have a large area or that can be expanded due to their importance, such as potatoes, tomatoes, onions, palms, pomegranates, mangoes, papayas, almonds, apples, and other crops that are generally well cultivated in Yemen. In order to reach the stage of full operation of all the energies and resources that constitute an element of strength, the most important of which are:

- There are many qualified and trained Yemeni agricultural expertise and competencies required to work in the early stages of implementing the plan to increase the country's productive and marketing agricultural capacity.

- The presence of a good group of scientific institutions from agricultural colleges and institutes includes many scientific departments and disciplines that need the issue of implementing this vision at various target stages.

Agriculture in Yemen... Obstacles

The average contribution of the agricultural sector is about 13.7% of the GDP. The agricultural sector constitutes 16.5% of the total national income. According to the official website of the Ministry of Agriculture and Irrigation in Sana'a.

Due to the diversity of climate and different levels of rainfall, irrigation regime, soil quality, temperature and humidity; All this contributes to the distribution and diversification of crops in the agricultural areas of the Republic of Yemen in accordance with the Third Economic and Social Development Plan for Poverty Alleviation issued in August 2010, by the Ministry of Planning and International Cooperation.

By: Samah Emlaq
Voice of hope

Diverse and Fertile Environment

The plan classifies the governorates of the Republic of Yemen according to their main plantations. The valley areas in the coastal plains grow fruit crops and cash crops, while grain and fodder crops grow in the heights and slopes. As for the terraced areas on the slopes of the mountains, the largest percentage of agricultural lands that depend on rainwater. Some types of grain are grown in it.

The ranks of the abundance of agricultural crops in the governorates of the Republic of Yemen were classified according to the most crops for each region - in the master's thesis entitled

(Future Prospects for Agriculture in the Yemeni Economy) by researcher Adiba Aida Mukhtar Al-Hashid, issued by the Institute of Research and Economic Studies in Cairo in 2003 - Al-Hodeidah governorate ranks first in terms of cultivating cereals, vegetables, fruits, legumes and fodder, while Sana'a ranks first in terms of cash crops, and Hajjah governorate in cultivating grains, fruits, and cash crops while Dhamar concentrated in grain crops. Vegetables are widely cultivated in the governorates of Ibb and Taiz, while fodder is grown in the governorates of Shabwa and Ma'rib.

Grain Cultivation at the Top

The data of the Central Bureau of Statistics for the year 2017 mentions that food grains

topped the list of agricultural crops in Yemen, accounting for 47% of the total cultivated area in the country. Specifically, grain accounts for an estimated 512,666 hectares of Yemen's total agricultural crop area of 1,084,008 hectares; That is nearly half of the country's total fertile land area.

The Director of Agricultural Extension in the Agriculture Office in Abyan Faraj Al-Shiraa stated "The area of grain cultivation has shrunk since the events of the conflict in Yemen, where the area of cultivated grain farms amounted to about 585,658 hectares in 2015, which means the desertification of 72,992 hectares of agricultural land that was planted with types of grains. Food from maize, millet, wheat, barley and so on.

Qat ranks second in terms of the cultivated area in Yemen, with an area of 16% of the total agricultural area, followed by fodder cultiva-



The Agricultural Sector and its Relationship with Food Security and Development

The Agricultural Sector Contributed 20.3% of Yemen's GDP

One of the most important economic sectors influencing the process of achieving sustainable food security in Yemen is the agricultural sector. It contributes greatly to the development process. The agricultural area in Yemen reaches about 1.4 million hectares out of the total area of 55 million hectares. But with the continuation of the conflict and the scarcity of water resources and the adoption of wrong agricultural practices, the cultivation of many crops that provide the citizen with a decent life has stopped, and the country has become dependent on commercial imports to meet the requirements of local consumption.

By: Manal Amin
Voice of Hope

Dr. Ghassan Qaid Al-Maqtari (Director General of the Center for Food Research and Post-Harvest Technologies in Aden) said "The most important challenges our country is going through with regard achieving food security is the lack of proper planning for the various service and development sectors that contribute to achieving food security due to the situation. The unstable security situation, which led to the exit of many private companies that supported the agricultural sector to a large extent, the suspension of some state-affiliated authority from providing the necessary support to farmers, which led to the suspension of the cultivation of some basic crops such as cotton and some grains.

Yemen has various research centers and stations whose tasks are to develop the agricultural sector by studying the importance of seeds used in agriculture and the extent to which they are used, which fall within the General Authority for Agricultural Research and Extension.

The authority consists of five research centers, including: (Livestock Development Research Center in Improving Breeds in Saber region, the Genetic Resources Center in Dhamar, a research center in Mukalla,

the Renewable Natural Resources Center in Dhamar, and the Center for Food Research and Post-Harvest Technologies in Aden).

It also includes eight research stations distributed in the form of regions (the northern station, which includes (Sana'a, Amran, Hajjah, Saada), the central station (Dhamar and Al-Bayda), the research station on the western coast, the Al-Kadan area (Bajil in Hodeidah), and the southern research station, which includes (Taiz, Ibb), the Marib research station, which includes (Marib and Al-Jawf), the Al-Koud station (Abyan and Lahj), the Seiyun research station (Sayun and Shabwa), and the Mukalla station, which includes (Hadramout Al-Wadi, Al-Mahra and Socotra).

Challenges

Al-Maqtari added to "Voice of Hope" by saying "The transformation of a lot of agricultural lands in various Yemeni governorates into residential and industrial schemes and qat farms, and not activating agricultural associations that support and supervise farmers during the cultivation process, and not activating oversight with regard to the marketing process of agricultural products are considered. It is one of the most important problems and difficulties facing the agricultural sector to a major degree, and it negatively affects food security and the development process.

For her part, researcher Dr. Nahida Saleh Al-Saqqaf, specializing in plant protection

(plant pathology, explains that agricultural crops are exposed from the time of cultivation to maturity, harvest and marketing to multiple factors that lead to damage and sometimes infection with fungal, bacterial, and viral diseases and many agricultural and animal pests, and factors that cause crop loss. When stored due to inappropriate heat and humidity, and high-water content of the crop, especially since all fruits and vegetables are living parts of the plant and contain 65-95% of water in their composition, and they continue even after harvesting.

She added, through a scientific paper presented to the newspaper "Voice of Hope" entitled (The role of disease injuries to agricultural crops, post-harvest transactions through the field and the end of the storage of the crop, and its impact on achieving food security) that post-harvest losses are considered an economic problem for vegetable and fruit crops. It is significant in Yemen. Loss rates may reach, in the general average, about 50% of the quantities produced, and at higher rates for some single crops. Loss occurs from the field, through transportation, storage, packaging, and trading in wholesale, retail markets and at home.

For his part, the agricultural and fishery expert Mokafeh Abdullah Muftah said "the agricultural and fisheries sector are considered as the most important sectors that achieve food security in the country, due to the presence of fish stocks in the Red and Arab Seas, and the presence of agricultural lands, if they are appropriately exploited, that will provide basic crops that contribute to self-sufficiency, especially in cereal crops.

He explained to "Voice of Hope" that the current situation that the sector is going through in general has become very weak, resulting in a rise in the prices of the costs of agriculture and basic labor such as seeds and fertilizers, and the prices of marine products that the citizen is unable to purchase.

Report and Stats

In a report issued by the Technical Sec-

retariat for Food Security of the Ministry of Planning and International Cooperation in September 2020, on (the role of the agricultural sector in contributing to achieving food security - cultivation and production of wheat). The report emphasized that the agricultural sector plays an important role in supplying the population with food, agricultural products and raw materials needed for many industries. The agricultural sector is affected by a series of interconnected natural factors and human interventions, which requires considering a balance for these factors to ensure its sustainability, especially when the natural resources that our country currently possesses are limited.

The report, which "Voice of Hope" newspaper obtained a copy of, indicated that among the results of the analysis of the phased characterization of food security conducted in 2019, showed that 20 million Yemenis (67% of the population) out of a total population of about 30.5 million people were suffering from Food insecurity, including nearly 10 million suffering from severe levels of hunger - an increase of 14% since 2018.

The report stated that according to the statistics of the Central Statistical Organization for the year 2017, the agricultural sector contributed 20.3% of the gross domestic product in Yemen. This percentage decrease to less than that if all oil activities are resumed.

The area of cultivated grain in Yemen is 528,078 hectares, or 37.7% of the total arable area, and produces 456714 tons, while the area of wheat is 57,466 hectares, or 10.9% of the total area of grain, which produces 100,332 tons, this quantity does not exceed 3% of the total wheat consumption of about 4 million tons, which is a big gap, the necessary policies and measures should be taken to reduce it and reduce the import burden on the country. This is according to the report.

A report issued by the secretariat for the month of June 2021 confirmed that there is an increase in the number of admissions for severe acute malnutrition (CMAM U5) from

the previous month by 46.40%, the rates of change for severe and moderate acute malnutrition were 48.77% and 45.44%, more than the previous month.

Treatments

Regarding the treatments, Al-Maqtari said that reactivating the Agricultural and Fishing Encouragement Fund to support farms by providing the necessary requirements for it such as basic seeds and equipment for cultivation, reconsidering the process of planning agricultural policies from the bottom up, and supporting farmers with appropriate seeds in proportion to food security, is considered one of the most important treatments that may contribute to improving the productivity of the agricultural sector, and providing the basic needs of citizens, even to a moderate degree.

He stressed the need to transform the process of distributing seeds to farmers into sustainable production projects within the response plan supported by the state at the present time, which helps in achieving the development process and enhances agricultural production and economic activity in Yemen and achieves food security.

In the same context, the expert Mukafh affirmed, "the need to pay attention to supporting farmers in various fields, improving irrigation channels that were damaged by torrential rains and need maintenance, benefiting from dams, legalizing, and controlling the export process, working to protect the marine environment from pollutants and indiscriminate fishing, and activating Legal legislation, and regulation of the work of fisheries and agricultural associations.

Dr. Nahid added: "In order to protect agricultural crops such as fruits and vegetables, it is preferable to find ways and means to preserve them and contribute to protecting them from loss and infection with fungal and bacterial diseases during the storage period by improving storage methods and finding appropriate alternatives that enhance the value of agricultural products, and help in the process of improving food security."

to the Aimed Food Security

tion, which has 12% of the total cultivated area in Yemen, while the area of fruits of all kinds reaches 8%. According to what was published by the Central Statistical Organization on its main website in 2019.

More than 37,000 Immigrants

Young Musa Saad, a farmer of zucchini and cucumbers in Ibb governorate said "I have been exiled since I was 13 years old, and I returned to Yemen in 2015 AD to see my family's livelihood, which was lost due to the events. My father is a teacher who lost his salary, and my brothers are children, so I started cultivating land I rented it to support my family and provide for those who need vegetables in the town."

The farmer residing in the Al-Sayani district in Ibb, Muhammad Najj Abdullah, added to Mu-

sa's talk by saying "The events of the conflict and the siege have contributed to the return of many young people and expatriate citizens, or those who left their land for the desire to live in the city. These are back in the axe (to work in the fields), and if our land was not rich land, they would be starving with their families.

With the return of more than 37,000 migrants to Yemen during the year 2020, a large segment of them - who have not yet been estimated - turned to work in agriculture, according to the announcement of the International Organization for Migration of the United Nations, and as a result, problems and disputes arose regarding the ownership of lands that had been deserted for years.

Challenges and Solutions

Engineer Yahya Ali Mohsen Idris, Director of

Agricultural Irrigation Department in the Agriculture Office in Ibb Governorate, lists the most prominent problems facing agriculture in Ibb, saying "Urban expansion at the expense of agricultural lands, the wide spread of the qat tree at the expense of other crops, especially grains, and the depletion of groundwater in irrigating qat. The displacement of many families from conflict areas to other governorates, the decline in agricultural extension work in delivering modern information to farmers due to the conditions the country is going through, and the high prices of oil derivatives that burden farmers."

The researcher in the Agricultural Research Authority (Ibb-Taiz) office, Muhammad Al-Nazili, mentions many challenges in the agricultural sector that stand in the way of food security, saying: "The lack of fertilizer

elements in agricultural lands, as a result of development and the accompanying decrease in the use of organic materials, whether human or animal, and the decrease the sharp increase in livestock breeding, also modern sanitation, poor awareness of the proper methods of preparing and using organic fertilizers, the sharp rise in the prices of chemical fertilizers, climate change, neglect of terraces, high wages of labor and scarcity of preparing agricultural equipment are all challenges to agriculture.

Idris added: "The competent authorities have played their role in improving agricultural production, by providing farmers with improved and high-yield seeds, preventing the export of grain, encouraging grain producers' associations, implementing a number of barriers and reservoirs that conserve rainwater,

as well as encouraging community initiatives such as plowing, and combating traffickers. Smuggled pesticides and aphids

In addition to activating the role of the General Administration of Marketing and Agricultural Trade and distributing modern beehives to poor families in remote areas such as Al-Qafir and Al-Udayn branch.

He also elaborated "The role of the General Organization for Agricultural Services should be better activated, as it provides farmers with production requirements at low prices and pays more attention to the cultivation and production of coffee seedlings, for example: We in (Ibb plantation) produce more than 500 thousand seedlings and sell them to farmers at cost 200 riyals, in addition to other seedlings of decorations, fruits and others.



Aunt Shafiqah Umm Mujib, coffee grower



The number of producing pepper trees is 150 trees owned by sister Nada Saif Ali in the village of Al-Adna - Al-Arouk - Haifan District.



20 papaya competition

A Partner in Development Rural Women's Stories While Achieving Food Security

Rural women are considered the cornerstone of achieving food security, as their role is not limited to carrying out household tasks only, but rather they are partners in economic development through the agricultural work they do.

Many rural areas of Yemen are completely dependent on women for their source of income, whether in the work they do in agricultural lands, starting with sowing and ending with harvesting, by raising and serving animals, or carrying out development projects to achieve food security for rural families.

By: Raja Moukard
Voice of Hope

Facts

According to the latest statistics published by the United Nations Fund (UNF) and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in April 2021, indicates:

Yemen ranks 155 - penultimate - in the Global Gender Gap Index for the year 2021, compared to 115 in 2006.

The poverty rate among Yemeni families headed by women at the rural areas was 72%, while the poverty rate among families headed by women was at the urban areas 20.1%.

71% of the prevalence of anemia among pregnant and lactating women in Yemen.

4.6 million women and 5.5 million girls need assistance during the year 2021.

Ahqaf

Ahqaf set the most wonderful examples in the pursuit of food security and left a mark that everyone remembered by praying for her after her death, as she became an example to follow, Al-Hajjah Zahra Abdullah - may Allah have mercy on her - worked the (Al-Ahqaf) initiative with her personal efforts, with her old age, and the benefits of the initiative continued generation after generation.

Al-Hujjah Zahra built water basins in every mountain, every hill, a small plateau in areas (from Al-Qasha to Al-Zamakheet, Najd Al-Watif, Jabal Al-Akthhar, Al-Mahfar and Al-Khalafa in the direction of Khattab), and countless places in Al-Arouk neighborhood -

Haifan district, and she did not complain or complain about fatigue, sun, and thirst.

Iskandar Dirham (Director of the Rural Women's Development Center, Wadi Al Hoceima, Abbous) said "Before every rainy season, Zahra Abdullah used to carry cement bags to a hill or to the top of the mountains, as well as transporting water bottles with a capacity of 20 liters. She did her best to prepare for people what they need when they visit these places.

Dirham added that she was transporting the necessary tools for digging, construction, and transporting food to those who work with her in her project, and she lived on this and did not retreat or get bored. Before every rainy season, she visits her Ahqafs to inspect its it and check if any of them need maintenance or restoration. The benefit of the Ahqaf is to irrigate agricultural crops, farmers and animals. So, they will benefit from them, and all of this contributes to achieving agricultural and animal food security.

As Eng. Abdullah Dirham said "The late Hajjah equipped Jabal al-Ikthrat with complete kitchen utensils so that if a group decides to go to this area, it will find it equipped with everything it needs, and this is what makes it easier for it to carry these things from its homes, and it has also built a bathroom at the bottom of the hill.

Livestock

The work that women do in the countryside varies. This Um Salem (from the Bani Ali district of Haifan district) owns a goat and cow barn, which she raises and takes care of, so that she and her family can benefit from



her food and financial revenues, especially during the blessed Eid al-Adha period.

Um Salem said "Because of the conflict and the interruption of salaries, her children and their wives returned to the house in the Bani Ali area, and the whole family relied on livestock in the house, as it benefited from the cow in selling milk and ghee to use in the daily food, according to her, the cow provides her with half the income of the house, and that the most important difficulty faced by goat grazing during the growing seasons.

As for the Al-Tabay'a area - Haifan district, the middle sister among her brothers and sister (S.M) said "Our life was very difficult in Al-Hodeidah governorate. We moved to the

countryside, Al-Tabay'a district, and our economic conditions at the beginning were very low. After that, I decided to raise municipal poultry (other than the farm)" And I started with two chickens."

After four months of raising poultry, (S.M.) said "one of the women in the area gave one of her brothers two rabbits, and that the family had two types of animals that multiplied until the family became famous for selling eggs, poultry, and rabbits, after a while they bought a cow and benefited from it. (SM) confirms that their lives improved as they invested this wealth, and they started building a house for themselves in the area.

As for the wife of A.S., said "Her hus-

band's profession was plowing, and what the husband left for her, and her children is a bull that they depend on to support the family. (A.S.) has two children at the age of nine and a girl at the age of eleven, who benefited from livestock (the bull) in renting it during the farming seasons and benefiting from the return to generate income for her and her family, in addition to her activity in agricultural lands during the harvest.

Afforestation

In the village of Al-Adna, Al-Arouk - Haifan District, Nada Seif was able to reach the number of produced peasbas trees to (150) trees. Dr. Habib Radman (owner of the Dr. Habib Development Fund project) the program of agriculture, irrigation and women's agricultural competitions said, "If you plant one tree of every kind, this is for you and your family, but for agriculture to turn into investment and rural development is the most important thing." Dr. Habib worked within the activities of (Dr. Habib Development Fund), which included 51 villages in the district of Haifan and Al Qubaita, the Agriculture and Irrigation Program, a competition for rural women.

The competition stated that each contestant either raise 20 chickens, or plant more than 50 tomato trees, or 20 papaya or three heads of cattle (he-goats) as a sacrifice for the feast, and any contestant who fulfills one of these previous conditions wins a sum of money of ten thousand riyals, and the number of prize



Eid Sacrifice 3 he goats, Contest



Aunt Shafiqah Umm Mujib, coffee grower



Tomato, radish, and peas cultivation competition in Qbeta and Haifan





The Hajah... Zahra Abdullah, may Allah have mercy on her,

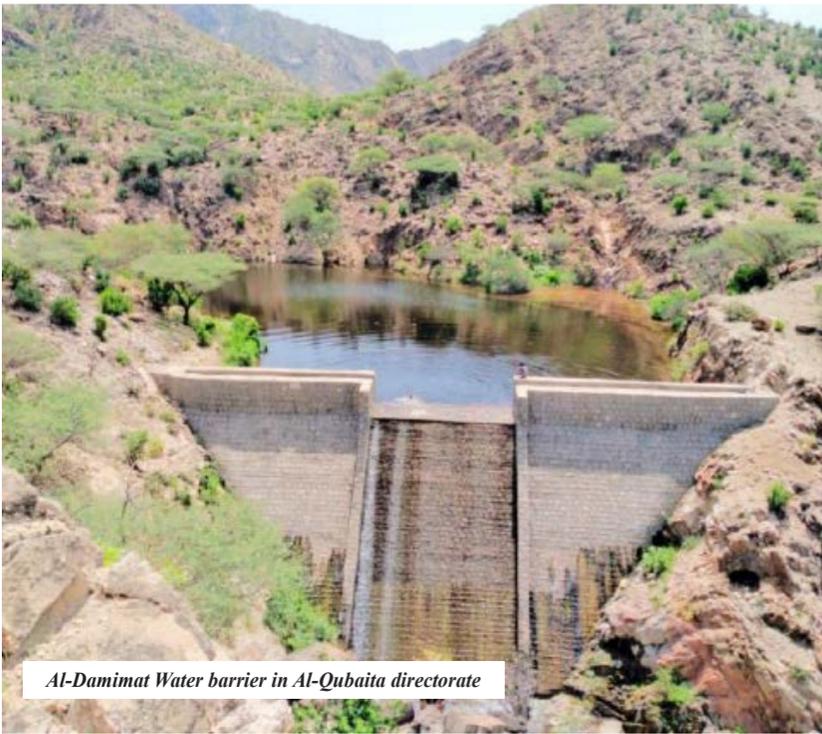


The Role of Agriculture in Ensuring National Food Security

Engineer/ Ahmed Saeed Al Wahsh

Despite the importance of the agricultural sector in the national economy, it continues to suffer from neglect and recession in its development, which has resulted in the deterioration of its economic situation and the increase of the size of the food gap. The investment policy of the state is reflected in the state's approach to reduce, whether absolutely or relatively, the volume of investments directed to this vital sector. The deteriorated situation of the sector has been particularly evident at the present through the great recession in its various fields, whether crop or important food production due to the volume of investments on the one hand and the ongoing war and political, economic and social instability at the present time on the other hand. The overall situation has caused a large number of people to suffer from food insecurity and deficit and has thus further exacerbated the problem of malnutrition. As the role of governmental bodies as well as of agricultural cooperatives in supporting farmers have been on the decline, other challenges have emerged in the face of farmers and agricultural development in general. Furthermore, among the problems, that have emerged, are the scarcity or poor distribution of equipment or material of production, as well as the control of merchants in imposing high prices on producers, which negatively affected the productivity of crops. Besides the problems of soil degradation, low productivity, poor performance of the marketing system, the high degree of risks faced by farmers with regard to price fluctuations in marketing various field crops and the increase of the monopoly of the private sector, farmers also face many financing problems as a result of the absence of the role of the specialized bank in the agricultural sector and its transfer into the private sector. In the light of what stated above, the continuation and success of the development process depends on overcoming these obstacles and challenges through rebuilding and creating new conditions that contribute to achieving self-sufficiency and food security. Paying attention to production and growth and following agricultural policies for economic development in general and agriculture in particular are thus important to achieve the objectives of food security and raising the living standards of Yemeni citizens.

Agricultural development requires the implementation of many development projects and various processes to develop the infrastructure towards positive change in the Yemeni countryside by means of regulating the use and development of available resources to the maximum extent possible and of relying on local and governmental efforts to achieve agricultural development by implementing means and methods to achieve self-sufficiency. The agricultural sector is the first productive sector that lies at the heart of the economies of the country now and then. The agriculture sector is considered the largest sector of the national economy, with the exception of the oil sector. It contributes about (13.1%) to the Gross domestic product (GDP). About (71%) of the population is also linked to the agricultural sector due to their living in the countryside— whether they work directly in agriculture or in services, crafts and industries in which the agricultural product is used or serve the rural and urban population. Moreover, It provides job opportunities for a large proportion of people; it employs more than half of the labor force in the country, which is estimated at about (45%) of the workforce. In addition, it provides a large part of the population's food needs and contributes to achieve a relative stability of the population, limits internal migration, alleviates the rates of social and economic problems, and reduces the rate of poverty and destitution associated with a large segment of rural societies. Nevertheless, there is a significant shortfall in the availability of sufficient capital to operate and develop the agricultural sector and its institutions due to the conditions of war and conflict and to the limited savings of Yemeni farmers, which prevents them from utilizing improved seeds and appropriate and organic fertilizers in terms of quantity and quality, at the right time and place, and according to the needs of the agricultural crop. This has led to a lack of access to agricultural production and a lack of improvement in food security.



Al-Damimat Water barrier in Al-Qubaita directorate



A Yemeni migrant who left exile and returned to his homeland, convinced of the importance of his work in his agricultural land, so he reclaimed it and planted it with different varieties.

winner reached 20 women from different villages in the district of Haifan and Al-Qubaita.

Moringa (Alba'an)

In the village of (Sama Allah) - Al-Qubeta, Gibran Abdo Gibran (founder of the Moringa Initiative) said "The management of the cultivation of the Moringa tree (Alba'an), is an agricultural initiative whose main objective is the development of agriculture. The beginning was in the villages of (Al-Sama Allah, Yousefeen, Qubeita) and then we expanded at the level of the Qubaita districts, and then we expanded to the villages of Haifan Districts.

Gibran added "Initially, a WhatsApp group was established under the name "Agricultural Forum." The forum included a group of people interested in agriculture in the villages of Sama Allah and its surroundings and gave their consent to enter any village in Haifan District as part of its first initiative. The goal was to motivate and direct people to farming and to love and care for the land.

On the reasons for choosing the Moringa tree to be the first tree for the agricultural forum, Eng. Gibran said "The tree's rapid growth and adaptation to any soil and its lack of need for large amounts of water. An ideal tree to be a successful agricultural experience, and this in turn will stimulate the agricultural aspect of many initiators of agriculture, the benefits of Moringa in treating many diseases and is a natural plant to resist oxidation and cancer".



Dr. Habib Radman
(Project owner of the Dr. Habib Development Fund)
Agriculture and irrigation program and women's agricultural competitions

He emphasized that moringa provides shade for other trees and does not compete with them for water, especially since the second tree in the "Agricultural Forum" initiative was the coffee tree, and it needs shade to grow. Moringa or Alba'an, most people do not know it and only hear about it in the song of the artist Ayoub Tarish (Alba'an branch, I love you) and it is nice for people to gain good knowledge about this tree and its importance.

Regarding the health benefit of the Alba'an tree for women in the countryside, the

study published in December 2013 (Moringa oleifera (Malunggay) as a Galactagogue for Breastfeeding Mothers) showed that the tree has health benefits for nursing mothers, as it generates milk, and has aesthetic benefits in addition to health. It contains many vitamins and nutrients that can contribute to achieving food security.

Water Dam

Initiatives were set up for the local community to build water barriers to collect rainwater, as the youth of Wadi Sharar Qubeita - Lahij initiated volunteer work from July 2021 the beginning was the work of the historic agricultural water barrier project in Wadi Sharar. Regarding this community activity, Mr. Abdo Ahmed Nasser Al-Qubati

(activist in the field of charitable and social work) told us that the local community took the initiative to adopt the agricultural development project in Wadi Sharar Qubeita; For irrigation with the support of the local community.

The initiative was to distribute 250 coffee seedlings to farmers within the 1,000 seedlings distribution program with the aim of encouraging coffee cultivation to be a source of income for the family. There will be advantage of water barriers.

Al-Qubati added that women have an important and main role in planting the vegetable trees necessary for the family's food table next to the houses, according to the availability of water, such as: tomatoes, peas, peppers, cucumbers, okra, zucchini, and others.



Engineer Gibran Abdo Muhammad, the owner of the idea of the Moringa tree



20 chickens' competition



The project of the historic agricultural field (sheeb) water barrier in Wadi Sharar



Food Security in Yemen through the Lens of the United Nations Integrated Food Security Phase Classification (IPC)

The analysis of Integrated Food Security Phase Classification (IPC), prepared by the United Nations and its affiliates, which is the global authority on food security, indicates that around 45% of Yemen's population is facing high levels of acute food insecurity. Within this number, 33% of the population are in crisis, 12% are in emergency and 16,500 people are in a catastrophic, famine-like, situation, the worst level of the IPC classifications on December 3, 2020. According to an analysis by IPC, 47,000 people are likely to experience "catastrophic" levels of food insecurity or famine-like conditions. The analysis also shows that another 16 million people are living in either "crisis" or "emergency" conditions for food security, a number that equates to more than half of Yemen's population.

According to IPC, by the end of 2020, about 16.5 thousand people from five regions in northern Yemen had become included within the disaster category (famine), which is the highest level of food insecurity. These numbers are rapidly increasing as Yemen suffers from acute fuel shortages and food aid depletion, and more than 47,000 people are expected to reach starvation by the end of June. This rapidly deteriorating situation is the result of funding cuts that have harmed the activities of agencies such as the World Food Program (WFP) that seeks to meet the basic needs of millions of Yemenis. The escalating crisis is attributed to a set of complex causes represented in the exacerbation of the conflict that has led to an economic collapse, including the extreme rise in currency and food prices in southern Yemen, the weak fuel imports which negatively affected the living situation of families, especially in northern Yemen, in addition to the spread of a pandemic Covid-19. With the decrease in cash transfers in Yemen to improve food security, all of these matters have exacerbated the suffering of Yemenis who have faced difficulty in getting food, cooking gas and UNICEF-supported welfare payments. The weakness of these cash transfers has led to the depletion of opportunities to earn money, and the weakening of health services to their maximum limits. The restrictions imposed on travel have also hampered access to markets. In addition to all of the above, the outbreak of many diseases that have exhausted Yemenis along with food insecurity and malnutrition, the spread of locusts and sudden floods due to atmospheric depressions and climate changes and their impact on the agricultural production process, have undermined local food production in many areas. Climate change is considered a fundamental issue in stabilizing food security. There is still time to tackle climate change, but it requires an unprecedented effort from all sectors of society in an effort to boost ambition and accelerate action to implement the Paris Agreement on Climate Change to maintain local agricultural production to provide food.

Although extreme poverty rates have been reduced to more than the half since 2000, one-tenth of the population of developing regions and their families live on less than \$1.90 a day, and millions earn hardly a little more than that. With great progress being made in many countries, including Yemen, in terms of eradicating poverty, it is estimated that more than 42% of the population still live below the poverty line due to the ongoing conflict in Yemen, which has led to a deteriorating living and economic situation. Cuts in humanitarian aid this year 2020-2021 – including food aid – have possibly reversed earlier gains in food security and caused families to suffer from widening gaps in the level of food consumption. The three agencies warned that the cuts will continue next year and may increase unless urgent funds are received. This means that the reality of the situation may become more difficult after these alarming expectations. According to UNICEF.

Besides pregnant and lactating women, over 3 million children under the age of five are projected to suffer from acute malnutrition in Yemen if the food security and nutrition situation – along with the low level of curative and preventive services and the shortage of basic supplies such as water, electricity, medicine and fuel – continue to deteriorate. All of these normally lead to a sharp increase in food prices associated with the loss of job opportunities which in turn leads to an increase in poverty and malnutrition among the most vulnerable groups. The survey of the Standardized Monitoring and Assessment of Relief and Transitions (SMART), conducted by UNICEF and the Ministry of Public Health and Population (MoPHP) in Aden, Lahej, Hajjah, Al-Hodeidah and AlBeidah during August- October 2015 shows alarming level of malnutrition,

especially in Al-Hodeidah where the Global Acute Malnutrition (GAM) is (31%) compared to (18.3%) in 2014. A serious deterioration was also noticed in Aden where the GAM doubled to (19.2%) in 2015 compared to (10.3%) in 2014. The GAM prevalence was (20.9%) in the lowlands and (9.9%) in the mountains areas of Hajjah governorates. The GAM was (20.5%) in the lowlands and (9.9%) in the mountains areas of Lahej governorates. However, the GAM rate in Al-Beidah has not showed any large deterioration, as according to the recent SMART survey in October it was at (6.6%) compared to (4.4%) in 2014.

In general, the overall nutrition situation is above the emergency threshold, which calls for emergency support and assistance to the most affected areas.

According to the UN agencies, i.e. the Food and Agriculture Organization (FAO) and Food Security Technical Secretariats (FSTS), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. This depends on three important elements:

First, food availability which means the quantities of food available at the national level and occurs through monitoring the overall economic activity through the annual domestic product, in addition to export and import, last year's stocks and food aid. In order to know the quantities of food available in the country, secondary information must be collected from different government sectors and international supporting organizations such as WFP and FAO.

Second, food access to locally produced and imported food and existing food stock. Even if we assume that there are abundant quantities of food in the country, the food security of individuals will not be available unless these individuals have access to this food. Food access is a measure of the extent to which people are able to obtain food through production, purchase, or any other method such as foreign aid. There must also be access to food in terms of transportation, closeness of markets, security, income and economic purchasing power from local food production. There must be access to food from donations and food aid.

Information on food access can be collected through secondary sources or from the primary source, i.e. WFP that follows several methods to determine the level of access to food, including: The amount of food consumption at the family level, the expenditure on food versus the general Household food expenditure of the family, the amount of food groups consumed per person per day. Through periodic reports issued by FSTS, citizens find it difficult to access food due to high prices. The rise in prices is due to many factors, the most important of which are: the decline of the local currency against foreign currencies, the non-disbursement of salaries for a large segment of civil servants for a long time, as well as the decrease in the volume of external remittances due to the imposition of large financial fees on the residence of expatriates, as well as the return of many expatriates to Yemen compounded the suffering of obtaining food.

Third, food utilization is the ability of individuals to make optimal use of food. This ensures healthy, nutritional as well as cultural habits. Although the availability of food is important, and so is the access to food, all individuals are not food secured unless they use food in an ideal way.

Noting that achieving food security cannot be achieved through local agricultural production due to many reasons, including the decline of arable agricultural lands, which amount to 1.4 million hectares, or 3.01% of the Yemeni land area. 47% of agricultural lands depend on rainfall (rain-fed agriculture), 38.2% on groundwater wells, and 12.5% on torrential rains and 2.3% on water springs. Cash crops

such as wheat, sesame, cotton, coffee account for only 7% of the agricultural areas, while animal fodder (13%), vegetables (5%), legumes (3%), fruits (8%) and qat (16%). By looking at the percentage of local agricultural production, we conclude that local production is modest compared to the number of people who exceed 25 million, all of whom need food. It is not possible to reach the required agricultural productivity to ensure food security because the agricultural determinants, i.e. elements of arable land and water are not enough and randomly used. Furthermore, Yemen is located within the geography of arid and semi-arid regions; therefore, to provide food and achieve food security, some basic products such as grains and others must be imported to cover the local production deficit. During the third quarter of 2021, the amount of imports for agricultural crops reached as follows: (Wheat 74%, flour 5%, rice 12%, sugar 2%, cooking oil 5%, and milk 2%).

Major Challenges for Achieving Food Security in Yemen

There are many challenges that impede access to food and achieving food security, according to the reports of the UN, FAO, FSTS, and other concerned agencies and ministries. These challenges are represented in:

- The overall humanitarian situation is further deteriorating and the situation of food insecurity in Yemen has become extremely worrying. Food security outcomes will deteriorate in areas under emergency according to Integrated Phase Classification of Food Security (IPC): (IPC Phase 4) and (IPC Phase 3). The crisis will only be worsened if the humanitarian response does not urgently reach the population affected by food insecurity. The continuous escalation of the conflict will also lead to a significant deterioration in the food security outcomes of the population, especially in the active conflict areas of Taiz, Saada, Hajjah, Al-Jawf, Marib, Shabwa and Abyan, followed by other governorates.

- The expectations of food security and nutrition for the year 2020-2021 is still worrying. Hence, it is necessary to continue exerting efforts to meet the basic needs of the affected and vulnerable population, build and improve community resilience to shocks through early recovery and rehabilitation programs for Yemeni communities, thus transforming them into producers by re-adopting project support from temporary support for humanitarian activities to continuous and permanent support for activities and programs provided by donors and supporters.

- Basic and other imported food commodities are available in the governorates markets, but access to food is a major problem facing most of the governorates' residents in cities and rural areas. The problem appears clearly in rural areas due to the spread of unemployment among the able-bodied youth among other reasons. This problem will increase as a result of the closure of borders of some exporting countries after waves of the recurrent Corona pandemic, the expected restrictions on agricultural exports and the higher prices of basic food commodities, as there are signs of a surge in wheat prices in international markets as well as of weak purchasing movement in large shops, which were accompanied by a reduction in employment opportunities for daily wage labor.

- High prices of food commodities as a result of the instability of the exchange rates of the local currency against foreign currencies and the rise in wheat prices on them.

- The fluctuation of imports of food commodities as a result of the poor availability of cash from hard currency on the one hand and the impact of the Corona pandemic on international navigation on the other hand.

- The high costs of transporting food commodities between governorates after the Yemeni Oil Company raised the prices of oil derivatives.

- The weak supervision of exchange stores



Engineer/ Ahmed Saeed Al Wahsh

and thus inconsistency in currency as there are unofficial exchange stores that manipulate rates and charge high fees for transfers.

- The lack of a clear vision on the continuity of the Saudi deposit to cover documentary credits for basic commodity imports.

- A decrease in foreign transfers as a result of the imposition of high residency fees for Yemeni workers in Saudi Arabia, the return of a large portion of them to the homeland, and the effects of the recurring Corona pandemic, which cause expatriates to lose their jobs as a result of the ban imposed by the neighboring countries.

- The lack of job opportunities and the spread of unemployment among the able-bodied youth.

- An increase in the number of displaced people from governorates where war and conflict prevail. There are no statistics to know their condition with regard to the nutritional situation and the repercussion of their displacement on the governorates to which they are displaced.

- Not providing the governorates with sufficient allocations of domestic gas from the Yemen Gas Company - Marib, which results in the emergence of a parallel market that sells gas at higher prices, thus depleting the citizen's income. This problem has been chronic for years and there are no solutions for it.

- The cost of household gas has risen after the Yemeni Gas Company raised the prices of gas cylinders, the non-compliance of agents with the selling prices set for them by the company, and the repercussions of these on food security. Prices in parallel markets are still very high and official channels for selling fuel and cooking gas are very limited. The recent fighting along the Marib Sana'a road has also been affecting the main supply line of cooking gas. This will further escalate the price of cooking gas and thus prolong the crisis. All of these caused an obstacle to improving the economic situation and public services, and affected the improvement the level of food security.

- The increasing number of the poor and their inability to provide the minimum food necessities.

- Raising insurance fees on imported goods, as Yemen is an unsafe country.

- Raising foreign shipping costs on merchandise imports.

- Delaying the arrival of goods to Yemeni ports as a result of inspections in neighboring countries, which raises the cost of shipping.

- Transfer commission between governorates and its impact on the different cost of food commodities.

- The absence of the role of government agencies and institutions entrusted with the process of improving agricultural production and providing food security due to the current conditions and the government's inability to disburse investment budgets to ministries and concerned authorities; this is accompanied by the transfer of most of the external funds to international organizations to play the role of official bodies inside Yemen. This created a kind of problem in transferring the support provided to farmers by international organizations and donors from temporary support to continuous and permanent support for activities and programs.

- Many projects and activities that were externally funded have been suspended due to the war and conflict, which played an important role in the agricultural sector and food security.

- The continuation of the long conflict has increased the rate of damage to the livelihood of the population. Therefore, the humanitarian community must continue to call for the success of calm in the conflict areas, stopping the war and adopting the dissemination of a culture of peace in order to facilitate the provision of humanitarian assistance along with activities that enhance the resilience and resilience of livelihoods of local communities.

- Insecurity and ongoing challenges to conducting field assessments and humanitarian services will further compromise the quality of interventions across Yemen, including the assessment of food security, nutrition, agriculture, livestock, fisheries, markets and overall macroeconomic indicators.

Summary of Recommendations and Practical Steps to Improve Food Security in Yemen:

- Encouraging traders to import basic food commodities and providing them with facilities by guaranteeing import at the official exchange rate.

- The necessity of putting an end to the deterioration of the national currency exchange rates and controlling the exchange process.

- Creating a sufficient strategic stockpile of basic food commodities for a period of four years by stimulating traders or direct intervention in partnership with the private sector.

- Determining the prices of basic food commodities covered at the official exchange rate and imposing strict control over prices in the market.

- Continuity of inspection campaigns carried out by the Banking Control Sector in the Central Bank of Yemen on companies and money exchangers to comply with the controls regulating the process of buying and selling currency and transfers.

- Eliminating the differences between the value of old and new monetary publications, as they are all legal and approved for circulation.

- Activating the role of monitoring the stations of selling private oil derivatives by the Yemeni Oil Company, after the new procedures imposed by the Central Bank of Yemen on importers of oil derivatives and granting the company a major role in them.

- Requiring all food traders to commit to publicizing the prices of goods in the front of their stores, and obligating importing traders and manufacturers of food commodities to set a profit margin for wholesale and retail trade and to take legal action against violators.

- Increasing the monthly allocations for the governorates of domestic gas, which will lead to price stability and limit manipulation.

- Strict control over unlicensed exchange houses and finding appropriate mechanisms to stop the manipulation of the local currency.

- The state intervenes in determining the transportation prices of goods between governorates and prevents monopoly in this field.

- Activating the role of monitoring and supervising the prices of selling domestic gas cylinders and taking deterrent measures against violators and price manipulators.

- Withdrawal of expired household gas cylinders or a comprehensive maintenance of them in order to preserve the health of the consumer.

- Counting the displaced in the governorates to know their condition and their impact on the food and health situation in all governorates.

- State support for agricultural production, specifically cash crops, to increase agricultural exports, as well as local grain crops, and to bring high-productivity varieties to reduce the cost of the local product.

- The state adopts the establishment of grain silos in the port of Aden to keep a strategic stock of wheat to avoid crises.

- Addressing the Ministry of Transport and the coalition to reconsider the inspection of ships in the port of Aden instead of the ports of neighboring countries.

- Activating the role of ministerial offices in financial control by publicizing the prices of goods in all stores and supervising and controlling the selling prices of basic canned food commodities from taxes and customs by putting an end to any unjustified price increase in accordance with the provisions of the Internal Trade Law.

- Reconsidering the funding provided by donors to achieve food security in Yemen by creating sustainable projects for the agricultural sector and farmers, helping them improve production and reach self-sufficiency.

- Reducing the food gap by linking priority investment projects and activities that achieve self-sufficiency and agricultural food security (agricultural inputs, water and irrigation methods, agricultural extension, marketing, storage).

Atroosh : A change should be made in all development sectors to bridge the food gap and achieve food security in Yemen



“There is no food security without development, and there is no development without scientific and applied research. Our country is rich in various natural resources such as agriculture, fish and extractive industries (oil and various minerals).” This is what the head of the Technical Secretariat for Food Security in Aden, Dr. Khader Balem Atroosh, confirmed in a press interview with Sawt Al-Amal newspaper (Voice of Hope) to present everything related to the general situation of food security in Yemen.

By: Manal Amin
Sawt Al-Amal (Voice of Hope)

- Would you describe for us the general situation of food security in Yemen, especially at this stage?

Food insecurity in Yemen has long been a chronic problem. However, it has further deteriorated to alarming levels over the past few years as armed conflict remained the major driver of this situation. The prolonged armed conflict and other associated shocks have led to an increase in acute food insecurity across the country.

According to the Integrated Phase Description of Acute Food Insecurity until the end of June 2021, 16.2 million people or 54% of the population, of whom about 5 million are on the brink of famine and about 50,000 people have already faced famine-like conditions, while the number of people in need of assistance is 20.7 million.

- What is the significance of the development process in our country for achieving food security?

Development in our country has not reached the level that enables to achieve food security. Change should be made for all development sectors, especially value-added ones that result in an increase in production and thus bridge the food gap, reduce imports and achieve food self-sufficiency, which in turn leads to achieving food security.

- How can natural resources be exploited in a way that alleviate problems of food insecurity that affects more than half of the population in Yemen, according to international reports?

There is no food security without development, and there is no development without scientific and applied research. Our country is rich in various natural resources such as agriculture, fish and extractive industries (oil and various minerals). Furthermore, Yemen owns ports which are a point of contact with the outside world and help develop foreign trade and improve the trade balance. When properly utilized according to scientific



Dr. Khader Balem Atroosh
The Head of Food Security Technical Secretariat (FSTS) in Aden

foundations, the ports make Yemen one of the richest countries in the world.

- Does the distribution of food aid contribute to alleviating the problem of food insecurity in Yemen?

Yes, in spite of the lack of commitment by some donor countries to provide food aid. According to the World Food Program (WFP) report, food aid targeted 11.9 million people, of whom 8.4 million people are provided with food aid, 2.3 million people with food vouchers and 1.2 million people with cash transfers.

- What are the key drivers of food insecurity?

The cumulative shocks, the increase of different food and livelihood coping strategies, the extremely low economic activities, the lack of public services and the high food prices, have led significant losses in income and in severe cases loss in livelihoods. Furthermore, the Corona pandemic (Covid 19) has posed a great threat to the life and stability of the population in most of the Yemeni regions. As of June 6, 2021, the total number of confirmed cases of COVID-19 was 6,787 with 1,329 associated deaths and 3,571 recoveries. The effects of COVID-19 in Yemen and abroad have led to a loss of income and a sharp drop in remittances, resulting in decreased purchasing power



er and increased food expenditures. On April 2021, the average monthly cost of the Survival Minimum Expenditure Basket (SMEB) in Yemen was 54,453 riyals, equivalent to US\$ 77, which is unaffordable for many families. All of the above have resulted in an over-reliance on humanitarian food assistance.

The Yemeni economy has suffered a serious deterioration over the years. Since December 2019, currency depreciation has grown by 36.2%, drop in remittances has declined, at least, by 20%, while fuel exports have also declined by 18%. Public sector workers have not received their salaries and more than 600,000 people have lost their jobs. The conflict also caused severe damage to the country's economic infrastructure, causing the Gross domestic product (GDP) to contract by more than 50% for the period (2014-2020).

- What is your assessment of the efforts exerted by the Yemeni government in facing food insecurity?

In an attempt to alleviate the suffering of the Yemeni people, the Yemeni government, with the help of partners, friends, and international organizations, have taken a series of governmental measures that seek to improve the state of food security, most notably:

□ Exerting efforts to stop the conflict, which had the greatest impact in destroying infrastructure and reducing livelihoods and thus increasing the number of

food uninsured.

□ Confronting the Corona virus by taking preventive measures and opening 24 isolation centres distributed in different governorates. On April 20, the vaccination process against Corona was launched. As of June 10, the number of vaccinated people reached 227,446 citizens.

□ Mobilizing support and humanitarian aid with a broad vision that transcends the lines of contact and conflict, in order to address food insecurity and resilience to face the fragility of livelihoods.

□ Applying a preferential exchange rate to importers of basic food commodities.

□ Establishing a food security information system with the support of the European Union, and appointing a technical secretariat for food security and coordination units in the governorates that monitor and analyze food security information and submit it to decision authorities.

□ Supporting farmers with customs exemptions for agricultural inputs, and encouraging and supporting investors in the food industry sector.

□ Supporting the health sector and encouraging investors in the health sector.

What are your suggestions to combat food insecurity?

From our experience in FSTS we recommend the following:

□ Taking possible measures to limit the

currency deterioration, which is the main reason for the rise in food commodities prices.

□ Encouraging traders to import food commodities and providing them with the necessary facilities by the state.

□ Determining the prices of food commodities according to cost with a profit margin, and imposing strict control over market prices.

□ Compelling all food traders to adhere to publicizing the prices of food commodities at the front of their stores and to take legal measures against violators.

□ State establishing of grain silos in the port of Aden to maintain strategic wheat reserves to weather times of crisis and food supply disruptions.

□ State support of agricultural production, especially cash crops, to increase agricultural exports, as well as local grain crops and to bring high-productivity varieties to reduce the cost of the local product.

□ State support of fish production and encouragement of fish industries and exports.

□ Increasing the monthly allocations for the governorates of domestic gas, which will lead to price stability and reduce manipulation.

□ Strengthening the role of the health sector in managing the COVID-19 pandemic to reduce human and material losses.

(Food Security (Concept - Importance - Components

Food security is considered one of the main challenges in the world, especially in the Arab world. Despite the availability of natural resources of land, water and human, Arab agriculture could not increase the target production to meet the unprecedented demand for food. The food gap has widened, and Arab countries have become to import about half of their basic food commodities. The rise in global food prices, natural and human disasters, severe weather phenomena, an increase in the world population, and global economic issues have all reinforced the dilemma how to ensure that food reaches people all over the world.

In view of the above, ensuring food availability has become a global concern, and this concern is increasing due to factors related to climate change and pressure.

Food security, then: is the state in which all people have access to sufficient, safe and nutritious food at all

times for a healthy, active and secure life.

The importance of food security lies in several points, the most important of which are:

• Encouraging investment in order to obtain additional income for families.

• Migration from the countryside to the city causes an increase in food consumption. This is due to the job opportunities that are available to this category, which contributes to their access to food.

• The population of the world's countries is constantly increasing. Undoubtedly, an increase in population necessarily means an increase in the demand for food; that is why countries must provide food in larger quantities and keep pace with the increasing demand for commodities, in order to protect themselves from food shortages.

Food Security Components:

Food security is one of the main areas of concern to the WFP, as it consists of several components, as

follows:

□ Food Availability: It is to provide and ensure food, in terms of quantity or quality, whether it is supplied, production, or stock.

□ Food Access: It is to ensure the arrival and obtaining of sufficient quantities of food, not only in terms of quantity, but also in terms of quality, in order to achieve food security objectives.

□ Food utilization: This means meeting all physiological needs through adopting an adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being.

□ Food supply stability: This means ensuring a constant, stable and sufficient food supply at all times.



Dr. Essam Hassan Mohamed Ahmed
A Senior Researcher at Education Research Development Centre (Aden)



Food Security in Yemen: Facing Realities and Challenges

Yemen in the Penultimate Phase of Food Insecurity

The cost of the minimum food basket increases by more than 25% in 12 Yemeni governorates

By: Alia Mohammed
 Sawt Al-Amal (Voice of Hope)

Yemen faces unprecedented economic, social and humanitarian conditions due to the continuing conflict and the lack of strict rules which organizes work in different sectors; this has exacerbated Yemen's food security crisis and paralyzed a number of economic activities that may help alleviate the suffering of citizens.

A report issued by the Food Security Technical Secretariat (FSTS) June 2021, revealed the challenges of the production and marketing of agricultural products; represented by the high production costs due to high fuel prices and various agricultural inputs, as a result of the deterioration in the exchange rate of the local currency, the lack of modern storage methods for farmers' products in central markets, and weak purchasing power due to low per capita income.

The report also noted the challenges facing access to imported food commodities due to fluctuating imports of food commodities due to weak availability of cash from hard currency, the impact of the Corona pandemic on international navigation, high costs of transporting goods between provinces, lack of employment opportunities and widespread youth unemployment.

The challenges facing fish activity are lack of production, lack of conservation facilities on the boat or fish landing centers, use of old-fashioned boats and traditional fishing methods, low quality of fish and income level, inability to purchase modern equipment in fishing and fish positioning, lack of fish research, and lack of knowledge of fish stocks.

Commodity Price Surges

"About 40% of Yemeni households have lost their main source of income, which has increased Yemen's total poverty rate". According to the economic report issued by the sector of economic studies and forecasts in August 2020. According to a report published on the UN website in July 2021, the rise in global commodity prices - up 34% year-on-year in June - led to a



rise in the cost of import-dependent food in Yemen, and the cost of a minimum food basket increased by more than 25% in 12 Yemeni provinces since the beginning of 2021, with the highest rise in Marib, Al-Dhale, Lahj, Sa'ada, Ibb, Aden and Abyan, where Marib recorded the highest rise of 44% due to the conflict.

The UN report also said that a total of 16.2 million people, including 2.3 million

children under the age of five, are severely malnourished, 400,000 are at risk of dying if left untreated, and some 1.2 million pregnant and nursing women suffer from acute malnutrition in various provinces.

Um Ali Ahmed (a Yemeni woman working in the education sector) says: Our material situation has worsened due to the conflict, and we are unable to provide a number of food and we have only provid-

ed the necessary things to continue life due to the interruption of salaries, and the food assistance provided by some organizations contributed to the reduction of the situation relatively but began to decrease year after year, first we were getting aid every month and then every two months and now we receive it only every four months and sometimes incomplete.

"We are currently in a very bad situation, we can't provide basic things from food and medicine, we buy some of them in debt, there is no justice in the distribution of food aid and it doesn't really reach the beneficiaries," Fouad Ahmed said, a free construction worker.

Stages of Food Insecurity

Food security technical secretary Nouri Jamal told Voice of Hope that food insecurity is going through five different stages, the first phase of which is minimal and is classified as more than 80% of households in the region are able to meet food and non-food needs. This is followed by a period of hardship in which 20% of households are able to consume the right food but do not have the capacity to spend on some basic non-food needs.

He added: The third stage is known as the crisis in which 20% of households suffer gaps in food consumption with a rise in acute malnutrition or higher than usual, while the fourth stage is known as emergency and includes 20% of families suffering from large gaps in food consumption and a severe rise in malnutrition, an increase in mortality or severe loss of access to livelihoods. The last stage is known as famine, in which 20% of families are extremely poor, so that hunger, destitution and death are evident.

"A number of Yemeni provinces have reached the third stage, some areas without humanitarian food assistance have reached famine, and a large number of people have lost their lives due to hunger," Jamal said on Yemen's food insecurity.

Challenges to Food Security

"The majority of the Yemeni people live below the poverty line as a result of the current situation that has prevented them from achieving food security and the majority of them are dependent on food aid,"

said Hassan Al-Kholani, director general of the agricultural research and extension sector. He stressed that local production has not been able to meet the needs of citizens of different food crops in terms of quantity, quality and timely access to them in sufficient quantity.

On the obstacles and difficulties facing food security in Yemen, Al-Kholani points out that the challenges are the growing population growth and climate change of irregular rainy seasons, fluctuating quantities and reduced production of local livestock breeds. In addition to limited agricultural area and water sources, arable area is 1452438 hectares and accounts for 3.6% of Yemen's total total area, while the crop area is 1124436 hectares. "It is important to get rid of khat cultivation, which has caused a decline in the productivity of local varieties of cereals, legumes and requirements," al-Kholani said.

Hassan Abdul Jabbar, head of the Faculty of Agriculture, said the requirements for food security are to provide arable land, provide improved seeds and create plans that encourage farmers to use modern irrigation techniques that reduce water consumption. He added: Food security will only be achieved by ensuring the provision and safety of food and securing any remaining trace of toxins or pesticides, in addition to relying on local products, and taking care of the development of agricultural fields in both plant and animal areas.

Solutions

Al-Kholani says mandatory programs should be developed to take advantage of secondary water sources, such as grey water, low-treated wastewater in irrigating trees and forest shrubs, bee pastures that will improve food status, and implement joint programs with the district health service to raise awareness of the importance of healthy food that can be obtained through home farming of vegetable crops.

He added: The need to spread and generalize the improved breeds of sheep, goats and poultry among farmers and breeders, and to spread methods and techniques that will increase the income of rural families such as the food industry for surplus plant and animal agricultural products.

The Future Vision for Food Security through the Opinions of Specialists

"We will not reach self-sufficiency except with a real and serious orientation by the state on the agricultural aspect"

Hanin Ahmed
 Sawt Al-Amal (Voice of Hope)

"There must be clear plans, directions and visions to promote sustainable food security that covers the needs of individuals and society at large." Dr. Mazen Nasser (faculty member at Nasser College of Agricultural Sciences) told Sawt Al-Amal.

Yemen has sufficient land, water, fish and human resources to achieve sustainable food security, but this can only be achieved if realistic plans and developments are implemented by all stakeholders, to benefit from, maintain, exploit and employ them in the right ways.

On the impact of population density on food security, Dr. Mazen says: The growth rate on the agricultural side during the same year is about 2%, while the growth rate of population growth in general is about 3.5%, where the pressure increases each year on the agricultural side, which results in the formation of a large food gap and a serious economic indicator if the state does not seek to increase the food product to reach self-sufficiency. That is, the state produces 100% of the needs of its population, and this will only happen if there is a real and serious direct.

Dr. Bassam Mohammed Ali Aman (Technical Director of the General Authority for

Agricultural Research and Extension) says that the more population increases, the greater the demand for food, especially with the ongoing climate changes, and the halting food production will lead to a food disaster in these circumstances, where the process of achieving full self-sufficiency is difficult due to limited access to natural resources.

The Problems of the Deterioration of the Agricultural Sector

Dr. Bassam also reviews the most important problems that contributed to the deterioration of the agricultural sector, saying: the lack of a real and scientific vision from the official authorities in how to promote the agricultural aspect at the level of planning and work, and the spread of qat cultivation, which took a large area of agricultural land reached about 184 thousand hectares in 2018 with a total consumption of more than 34% of the total water in Yemen. At the expense of other crop cultivation, in addition to rural migration to cities, it is one of the most important reasons for the deterioration of the agricultural sector.

He added: The excessive use of pesticides and immersion during irrigation has had negative effects on agricultural land, the lack of native seeds, and the use of imported unproductive seeds that have caused the agricultural sector to exhaust.

Develop Scientific Plans

Food security relies on the use of the three natural resources (land supplier, water supplier, and vegetation resource) that play a major role in food security. Specialists believe that the development of the right scientific plans to improve the performance of these resources and the proper implementation of their provisions and with the participation of all will contribute to a positive outcome that will alleviate Yemen's suffering with regard to the food aspect.

Dr. Mazen believes that there are many problems and challenges that the agricultural sector is going through that must be considered and addressed with clear plans, directions and visions from all parties concerned to promote the agricultural sector and achieve sustainable food security.

For his part, Dr. Bassam stresses this, saying that it is necessary to develop correct scientific plans to improve the performance of these resources in a proper manner and in partnership with all planning and implementation stakeholders (government, international supporting actors, and civil society organizations), to make the most of the energies and capabilities available in each institution, and priorities must be set to improve the performance of central resources in improving agricultural production, Plans are then made for

effective marketing mechanisms at the local and external levels.

He added: It is important to develop effective plans to increase agricultural production caring of the applied agricultural research sector, and support research centers to be able to play their role in reducing the gap by developing improved seed varieties, drought-resistant plant varieties and salinity, in addition to enabling farmers to have access to modern irrigation systems (bubble irrigation, drip, spraying)

Regarding to the importance of leveraging the active youth forces and energies in society to bring about real development leads to increased local production; Dr. Mazen Nasser says: "The sectors will not rise and food security will not be achieved without benefiting from the youth group, because they are the most energy-intensive group that must be invested to serve the community, which will work to bring about real development leading to increased local production in various sectors, especially the agricultural sector, and young people represent about 70% of the labor force, and unfortunately there are currently no development plans to support their exploitation."

Dr. Bassam Aman stresses that the expertise of former qualified cadres should be utilized through the implementation of training programs targeting youth energies in the ag-

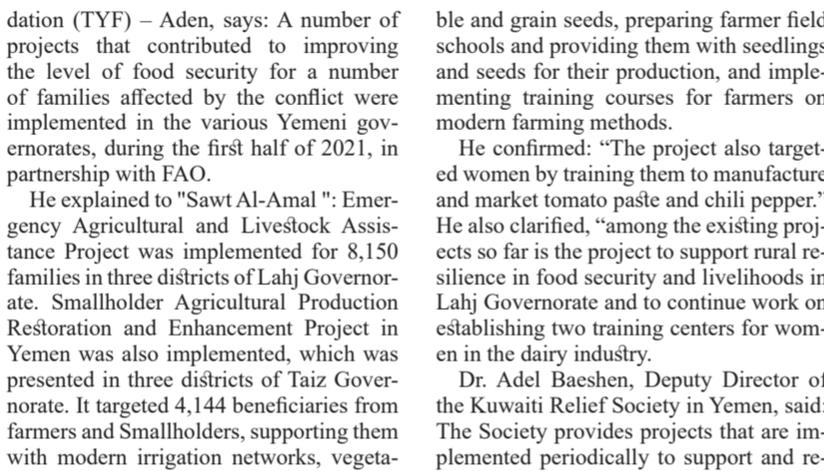


Dr. Mazen Nasser, A faculty member at Nasser Faculty of Agricultural Sciences

ricultural, water, fish and development fields, to come up with the outputs of the process of achieving food security and self-sufficiency.

To find out how agricultural projects have affected food security during the past periods, Dr. Mazen and Dr. Bassam stress that there are no real and influential projects implemented by the state or supporting organizations in the field of improving food security. All programs implemented by the relevant institutions involved in food security improvements are not sustainable reality projects, but temporary programs covering real-time needs.

Community Organizations Modestly Support Food Security Projects in Yemen



duce the gap in food security for the target groups, by distributing thousands of food baskets. During the past six months, it distributed (26,000) thousand integrated food baskets in 12 governorates at the country level (Aden, Lahj, Abyan, Taiz, Hodeidah, Marib, Ibb, Sana'a, Al-Jawf, Shabwa, Hadramout, Al- Al-Dhale). In addition, it provided income-generating job opportunities so that each family can obtain its income and get the necessary nutritional and living requirements.

He added that these projects make a significant contribution in reducing the need gap and achieving temporary economic stability for the target groups and segments - those with limited or no income- who suffer from severe problems in the aspects of food supplies.

He also explained: There are many difficulties related to the widening circle of need in the country, the deficit that arises in covering it, the constant instability in the currency exchange rates and differences in currency have led to rapid fluctuations in the foodstuffs purchased. Nevertheless, we are keen to obligate suppliers to medium-term forward contracts for purchase to ensure price stability throughout the project period. We are also keen to purchase high-quality local product to ensure its continued availability in the market.

Elite Opinions

Engineer Iskandar Al-Hakimi, a Hu-

man nutrition researcher at the Center for Food Research and Post-harvest Technology in Aden, believes that organizations provide emergency response projects and have nothing to do with long-term food security projects.

Dr. Taha Abdu Ali, a researcher in the field of community nutrition in Aden, said: Civil society organizations and institutions have a major role in achieving food security through the implementation of various vital projects and activities. It is worth noting that non-governmental organizations and civil society institutions have gained great experience in the field of sustainable development, food security and environmental preservation through a comprehensive development process.

He added: There are some failures in the programs provided by organizations and shortcomings in their activities. These failures are ascribed to the lack of exploitation of available local resources. Achieving food security requires comprehensive development, optimal exploitation of resources, and full insurance of local and regional food sources. This made the role of civil society organizations very important by developing society in all areas and alleviating poverty and then achieving food security resulting from policies and strategies related to various productive activities, in particular agricultural and animal activity.

“ The high proportion of humanitarian needs and the worsening economic crisis in Yemen have led to food insecurity and the intervention of international and local organizations to contribute to alleviating the problem and limiting the expansion of the food gap.

In light of recent events in the country in general, which have led to a scarcity of support for sectors related to achieving food security, the organizations have had an active role in cooperating with the Ministry of Agriculture, Irrigation and Fisheries, and providing the necessary projects to support and enhance food security in Yemen.

By: Hanin Ahmed
Sawt Al-Amal (Voice of Hope)

According to what was posted on its official website, the World Food Program (WFP) in Yemen targeted 11.9 million people with general food assistance in 2021, through several programs that included food assistance aiming to feed nearly 13 million of the most vulnerable people each month, in the forms of in-kind food aid or vouchers to purchase the same amount of food. The cash-based transfer program provides the targeted people with money equal to the value of the food basket.

There are food support programs that were implemented in response to high acute, moderate and severe malnutrition among children. These programs targeted about 3.3 million pregnant and lactating women and children under the age of five.

WFP School feeding program ensures an appropriate distribution of daily snacks to 1.55 million children. The Livelihoods Support Program focused on building a sustainable future by reaching 1.2 million people with projects that contribute to rebuilding productive assets such as roads, agricultural land and health facilities, in addition to training.

World Food Program (WFP)

WFP indicated that a World Bank financial support estimated at \$24.2 million contributed to meet the food needs of women and children in areas with the highest rates of food insecurity and provide these vulnerable groups with special nutritional products to treat and prevent malnutrition. The project will improve the nutritional situation of vulnerable rural communities. With a focus on the key role that women play in improving food security, the project will promote women's entrepreneurship by providing them with skills development opportunities and operational grants focusing on agriculture and food production.

The United Nations Development Program (UNDP)

UNDP in Yemen implemented a number of programs that improve community livelihoods, productive assets and food security by targeting crisis-affected communities in six governorates: Abyan, Hajjah, Hodeidah, Lahj, Taiz and Sana'a. UNDP implemented all the above through the Supporting Resilient Livelihoods and Food Security in Yemen Joint Program (ERRY II) which is a 3-year program financed by the EU and SIDA and jointly implemented together with FAO, ILO and WFP.

UNDP in Yemen presented its plan to implement a project to lead and implement a set of measures to adapt to climate changes that affect food security, with the support of the World Bank amounting to \$23.8 million.

Civil Society Organizations (CSOs)

Mohammed Al-Zaem, the Food Program Coordinator at Tamdeen Youth Foun-

ation (TYF) – Aden, says: A number of projects that contributed to improving the level of food security for a number of families affected by the conflict were implemented in the various Yemeni governorates, during the first half of 2021, in partnership with FAO.

He explained to "Sawt Al-Amal": Emergency Agricultural and Livestock Assistance Project was implemented for 8,150 families in three districts of Lahj Governorate. Smallholder Agricultural Production Restoration and Enhancement Project in Yemen was also implemented, which was presented in three districts of Taiz Governorate. It targeted 4,144 beneficiaries from farmers and Smallholders, supporting them with modern irrigation networks, vegeta-

ble and grain seeds, preparing farmer field schools and providing them with seedlings and seeds for their production, and implementing training courses for farmers on modern farming methods.

He confirmed: "The project also targeted women by training them to manufacture and market tomato paste and chili pepper." He also clarified, "among the existing projects so far is the project to support rural resilience in food security and livelihoods in Lahj Governorate and to continue work on establishing two training centers for women in the dairy industry.

Dr. Adel Baeshen, Deputy Director of the Kuwaiti Relief Society in Yemen, said: The Society provides projects that are implemented periodically to support and re-



On the Way to Achieving Food Security

Young Feet on a Path Strewn with Thorns



Youth is the mainstay of nations. They play a pivotal role in solving problems facing their countries in time of crises; at the forefront of these crises is the food crisis.

In Yemen, there are young people with shining faces, who doubled their efforts to achieve food security for the citizens affected by the conflict through providing basic needs of food and medicine. This is just the tip of the iceberg.

Samah Emlaak
Sawt Al-Amal (Voice of Hope)

Steps of Hope Initiative

The "Steps of Hope" initiative was founded by human rights activist Sabah Mohammed Farhan in Taiz governorate. She focused her efforts on the Al-Jahmalia area in the Salh district, as it is the most conflict-affected area.

Sabah said: She works in the charitable field because of her love for this humanitarian work; she sees the circle of people affected by the conflict in Yemen constantly expanding. Most of the targeted people in her initiative are those who lost their livelihoods, their salaries their homes.

She added, "We decided to volunteer to establish the "Steps of Hope" initiative with our own efforts. Our work focuses on coordinating with some institutions, organizations and philanthropists to act as mediators and regulators, in order to provide food and clean water for a broad base of citizens most in need.

Sabah aspires to achieve food sufficiency and deliver humanitarian aid for every citizen affected and displaced by the conflict. The limited support, the slow response, and nepotism by the supporting institutions are among the main challenges they face in their work.

Sabah concluded saying: The situation is very tense. In my own personal estimate, the affected people amount to 95% of the total population in Taiz Governorate; the percentage of the rest of the governorates, with its disparity, may be close to that. We hope that the relief agencies focus on the most needy and vulnerable groups, such as women, children, elderly people as well as the wounded and the families of martyrs and pay attention to territories under the line of fire.

Good Hands Initiative

Young woman Iftikhar Saeed Yahya Ali chaired the "Ayyad Al Khair" initiative in Taiz in 2010. She worked as a volunteer in charitable and social work.

She said, "Conflict and siege have led to food insecurity in Taiz. The bulk of the

The scarcity of food came out as a result of the fragile role of the state and of people's lack of awareness of the importance of cultivating the land with natural grain crops.

Our work focuses on coordinating with some institutions, organizations and philanthropists to act as mediators and regulators, in order to provide food and clean water.

problem disappears with the end of the two causes."

She explains the nature of her work by saying: Our role is to help people in need, by providing food baskets and safe drinking water, support for education (literacy), and support for small projects that empower women economically, such as sewing, beautification, and handicrafts.

Iftikhar became a member of the community committee of the Salh district due to her societal activities for humanitarian work. Iftikhar listed the obstacles that stand in the way of her work, saying: "As there are many people in need of support, we suffer from a lack of support. I chose this job out of my sense of responsibility towards my community. I aspire to build development projects, so that community members will be able to enjoy food security. In addition, we aspire to focus on volunteer teachers due to the displacement of most of the major teachers from Taiz governorate to other governorates. Without the volunteers, the educational process would have stopped."

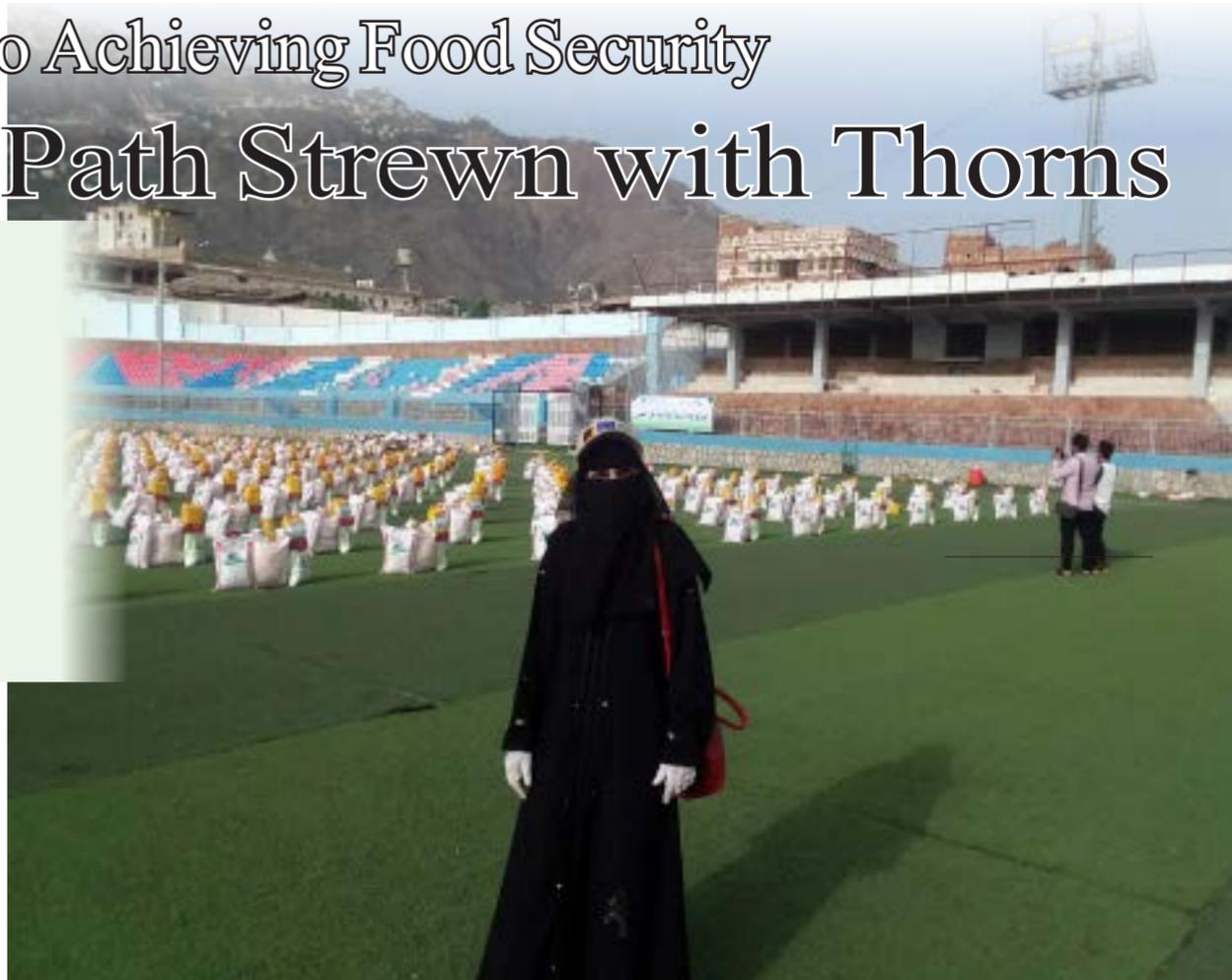
A Mango and Guava Farm

Munir Qassem worked on his father's farm since early age. Being a farmer is a part of one's self-identity that what makes Munir happy and feel proud of himself. Although he joined the Department of Media at Sana'a University, he did not leave the farm in his village (Hazm al-Udayn district, Ibb Governorate). He undertakes care of the farm on his holidays, fixing what was ruined during his absence.

Munir says, "My farm produces about 1200 baskets of mangoes annually and about the same quantity or more of guava. If it gets more attention, it will produce twice as much."

Munir adds: Food security will not be achieved in Yemen unless the people turn their focus towards their lands. His farm, which is approximately estimated at 50 acres, alone is sufficient to cover an entire popular market; how about large farms that produce crops of all kinds!

Munir attributes the reasons for his suffering to a number of reasons, namely the lack of resources, his preoccupation with studying at university, and the interest of his elderly mother in the farm in his absence.



Fouad Abdel-Khaleq



Munir Qassem



Sabah Farhan



Najeeba Aqlan

Moreover, the scarcity of water during winter forces him to take care of it only in summer when there is rain.

However, Munir aspires, after his graduation from university, to return to his farm and take care of it and work on other farms owned by his family, as an employee. He said: "It does not matter who works with whom, the most important thing is that our land never becomes a wasteland."

A Cucumber Farm

Fouad Abdel-Khaleq decided to leave his work in Marib governorate and return to his home town in Al-Sayani district, Ibb governorate to establish an agricultural reserve in one of his family's abandoned lands.

Fouad talked about his beginnings in agriculture, saying: "At first, I owed the women of my family their gold. After reclaiming my land, I planted it to pay off my debts in one year. My farm today is more productive than before because of my continuous attention and care of it."

He continued recounting his suffering, explaining: "I see myself working hard to achieve food security for my town through

providing enough cucumbers and tomatoes. My annual production covers a great deal of the local market needs, especially after the outbreak of the conflict that reduced both imports and local production."

He hopes that the concerned authorities will support the farmers with the necessary fertilizers and reduce the taxes imposed on them. He also hopes that the owners of water projects will reduce the prices of irrigation water.

Kawthar Development Council

Najeeba Aqlan Saeed is the head of the Al Kawthar Development Council in Taiz. After the outbreak of the conflict in Yemen, Najeeba felt sad about the situation the country has reached as people have become deprived of the basic necessities of life. Therefore, she went out to seek and search for effective organizations in Taiz after she had prepared a database of the families in need in her area and went to all the organizations, bodies and the local authority as well.

Najeeba said: "Some of them were re-

sponsive and others were not, but I did not despair. We hardly tried to provide the people of my neighborhood with safe drinking water through public tanks twice a week and with food baskets in an attempt to bridge the food gap."

She elaborated, "The deterioration in the food security and the scarcity of food came out as a result of the fragile role of the state and of people's lack of awareness of the importance of cultivating the land with natural grain crops and of relying on their lands to ensure their own food security."

The aids provided by organizations to families in need- according to Najeeba - are just drops in the sea; their aids do not cover the needs of families for the whole month. Although, there are families do not receive any support, Najeeba's efforts are valued and appreciated.

She pointed out, "I faced many difficulties and overcame most of them, including the promises of the organizations that have not been fulfilled yet, which have exposed me to great embarrassment in front of my society that pins its hope on me."



The Suffering of the Yemeni People due to the Deteriorating Economy and the Worsening Food Insecurity

In July 2021, World Food Program (WFP) has warned that Yemen's rapid and worrying economic downturn threatened to worsen the hunger crisis significantly due to the rise in food prices during the first half of 2021, which increased the suffering of millions dependent mainly on imports, and weakened their ability to buy enough food, as the cost of the minimum food basket increased by more than 25% in 12 provinces, and represented (Marib, Hajj, Sa'ada, Ibb, Aden and Abyan) higher than the rest of the provinces.

**By: Manal Amin- Sawt Al-Amal
(Voice of Hope)**

Anwar Al-abdali (editor of Crater Net in Lahj province) says that the food security situation in Yemen has become very difficult, as many families suffer from malnutrition problems due to the lack of income for salary-dependent employees, their incompatibility with high food prices with no fixed income, and their breadwinner working on daily wages, and middle-income families have entered the poverty list because they suffer from malnutrition and hunger.

She pointed out that addressing this difficult situation requires controlling the exchange rates of currencies against the Yemeni riyal and controlling food prices; by activating the Chamber of Commerce and Industry by going down the field to the shops. Finding a political solution to the crisis that the country is experiencing in general in order to contribute the stability of the currency and provide the necessary supplies to the citizen.

Azmi Ali, 40 years old, who works for local organizations in Aden, points out that our country is facing the specter of famine due to food insecurity and the decline of the economic sector, which is ineffective in food production; that may contribute to alleviating food insecurity in various sectors.

The main reasons that contributed to the worsening of the problem are likely to be: the continuing conflict, the interruption of the export process for oil derivatives, and the rise in currency prices resulting in higher food prices. The spread of Corona virus-

es has also led to a decline in remittances from abroad as many families rely heavily on these transfers, which provide them with their necessary food requirements.

The Role of the Supporting Organizations

According to a 2020 report by the Technical Secretariat for Food Security on the role of the agricultural sector in contributing to food security: "Healthy food security is achieved when humans have access to adequate safe and nutritious food for a healthy life, reflected in four key factors: abundant food, access and intake, and stability."

Assem Al-Khadhami (journalist from Hodeida) explains that food security in Yemen is very deteriorating, as many Yemeni families are unable to provide the minimum requirements for a decent life such as flour and rice because of the high prices of low-income citizens.

He points out that international organizations which support citizens with food baskets have made an influential contribution to alleviating this suffering during different periods. It has also supported sectors that help achieve food security, but the unstable situation in the country and currency instability in Yemen in general have reduced the use of such aid pumped into Yemen to no avail.

"The salary has become worthless in light of the increasing price hikes, especially the basic materials that every home needs, and the role of organizations has become limited to specific places and to certain people, because there are many rotten families that no one knows about." Um Najla Ahmed,



46, from Taiz, said.

"Food assistance provided monthly by some organizations has been a source of distress for many poor and middle-income families in these difficult situations, particularly in Taiz, but these organizations no longer distribute food aid except rarely and for a certain group." She added.

Um Ahmed Mohammed, 60, from Taiz, says: "We don't know the meaning of the term "food security" and we don't care. What concerns us is how we can make a living, as our country is full of good things, but the people are starving, and this is very bad actually."

She added: "We used to be able to eat from the bounties of this land of wheat, corn, vegetables, fruits and other food crops and we don't wait for the salary like now. Today, however, the qat tree is in control

of agricultural land, and there is a scarcity in the provision of essential vegetables that have become expensive to the citizen, and the fish have increased in price and the salary of my deceased husband benefits me nothing."

Determination in Life.

A report issued by the Technical Secretariat for Food Security of the Ministry of Planning and International Cooperation in February 2021 indicated that the amount of basic food goods imported during February 2021 to sea ports and land ports (Aden, Mukalla, Shahen, AlWadea, Socotra) amounted to about (140133) tons, wheat was 55%, rice by 21%, flour 9%, sugar 9%, milk 4% and cooking oil 2%.

Abdulsalam Ali, a 43-year-old employee in Aden, said: "Our country is suffering

more and more because of the continuing conflict that has exhausted the citizen in the main place, so there are displaced people, refugees and destitute people; poverty and hunger among the community have increased, but there is an insistence on continuing to live with all the difficulties and challenges."

On the impact of food security on the living situation, s/he stresses that the worsening problem of food security in Yemen has had a significant impact on the living situation of Yemeni citizens in terms of providing basic food on a monthly basis. While adhering to the requirements of schools, universities, transportation and medicines that s/he also suffers from, all of which are too high, as there are no new jobs that contribute to alleviating the suffering of citizens in general and employees in particular.

The Food Gap Measures in Yemen

Individual Needs, Budget Deficit, Differences in Food Production and Food Consumption, Conflict and Solutions

"Five million people are on the brink of famine and 50,000 people are suffering from famine-like conditions," the central bureau of statistics reported in March 2021. Food insecurity is a problem that has worsened tremendously rapidly in recent periods, both because of conflict and the high price of the food basket, which calls for solutions and remedies to escape the widening food gap.

**Rajaa Mukred
Sawt Al-Amal (Voice of Hope)**

The population in need of humanitarian and protection assistance reached about 20.7 million, more than 2.25 million children (under five years of age) and 1 million women (pregnant or nursing) expected to suffer from acute malnutrition during the current year 2021, and 45% of the population studied their situation between October and December 2020 suffer from acute food insecurity (2020). (Phase III and above the integrated interim classification). According to Kamal Al Khamari (consultant in the sector of economic studies and forecasts at the Ministry of Planning and International Cooperation).

The most important indicators contributing to the widening food gap and the lack of economic stability are consumer price inflation amid the state

budget deficit, affecting the individual's needs, family income level and access to basic services. Here, Khamari points out that the per capita GDP at the parallel exchange rate for 2019 was about \$364, while the total budget deficit to GDP in 2019 compared to 4.8% in 2019 2014 was 909%, and from 2019-2014 the average ratio of domestic public debt to GDP was 85.1%, and the annual average level of GDP contraction was 11.7%.

Consumption and production are affected by the different currency rate, as foreign exchange is one of the most important influences in human living standards, food security levels and poverty, as confirmed by FAO statistics in 2018-2020.

The Yemeni currency has experienced a marked deterioration in the foreign exchange market, up from 215 riyals/dollar in 2015, to 718.5 riyals/dollar in 2020 at the national level.

Food Basket and Adaptation Strategy

In a press release (Monthly Market Monitoring Bulletin January 2021) obtained by the newspaper "Voice of Hope" through the director of the Technical Secretariat for Food Security in Sana'a Dr. Abdul Wahid Makrad, who stated that: The average cost of the lowest food basket in January was 46,565 riyals, a decrease in 2021 by 1% compared to last December 2020. The cost of the basket in the southern provinces increased by 18% compared to the national average and 34% higher than in the northern provinces, and the largest cost in Socotra remained 63,600 riyals, 61,300 riyals in Shabwa, and 55,750 riyals in Aden, while Sa'ada was 34,300 riyals, the lowest cost.

The statement also said that during January this year, 354,992 metric tons of various food items were imported into the country through the ports of Aden, Mukalla, Socotra and land ports 'shahen, Almahra, AlWadea, Hadramout, of which 183,533 Metric tons of major basic food commodities such as wheat grains, flour, sugar, rice, milk and cooking oil, the rest is a food supplement of crushed yellow peas, lentils and various other commodities, and total imports of humanitarian assistance reached about 3,139 tons through the ports of Aden and Socotra.

The seven-person-per-month food basket contains ingredients (75 kg white flour, 10 kg red beans, 8 liters of vegetable cooking oil (imported), 2.5 kg of sugar and 1 kg of salt added to iodine).

Abdullah al-Hafafi, an official with the Technical Secretariat for Food Security in Sana'a, said: "The higher prices are causing the food gap to widen, the higher the prices, the more people resort to a certain strategy called "adaptation", for example: instead of buying high-quality rice and "basmati rice", buying other rice of lower quality but its price is suitable for the income of the citizen, which achieves less nutritional value and so on in other commodities.

Conflict and Solutions

Al-Hafafi adds: "The conflict has had a significant and direct impact on the lives of Yemeni citizens, with the least of these effects disrupting the main roads through which food passes to conflict zones, as food suppliers are forced to take long, twisted and arduous roads to deliver food, which leads to higher or no access to food prices, as well as the inability of citizens to buy it."

One possible solution to resolving the food insecurity crisis would be to end the conflict, promote production, food processing, and raise farmers' levels and treat currency degradation, because the currency is responsible for reducing citizens' purchasing power and destroying the economy, he said.

For his part, Dr. Bassam Abdullah (supervisor of the Qafr Directorate at the Relief and Development Peers Foundation) shortens the treatments to achieve food security by (obtaining, reaching, abundance, continuity, closing the pro-

ductivity gap, reducing food waste, using fertilizer properly, raising water productivity), stressing that the first steps to achieve food security are the existence of a strong country capable of exercising its full powers and all its territories, and controlling its resources "and this is not available to us," as he said.

Abdullah adds that food security will be achieved in Yemen when all people at all times have the physical and social capacity to obtain sufficient amounts of healthy food to meet their nutritional needs and food preferences that guarantee them an active and healthy life.

Dr. Bassam Abdullah outlines the following points for food security:

1. Providing food in quantities sufficient for the family and meeting its need for food, a role played by the breadwinner, as well as regulations in States, organizations, charities and others.

2. Access to food, through the use of production, household stock and the purchase of food through sources of income, cash transfers, monthly salaries and others.

3. Eat food, when the family eats the food it has received; including properly preserving, processing, preparing and distributing it.

4. Livelihoods, including capacities and resources, whether natural, material or social.

5. Nutrition, these processes monitored by eating, digesting and benefiting from the body.



Dr. Abdul-kawi Al-Shamiri

Food Security in Yemen

The concept of food security refers to the availability of food, in quantity and quality, to all members of society, necessary to meet their needs on an ongoing basis for a healthy and active life.

When food is available to all members of the community at all times in sufficient, safe and nutritious quantities to meet their nutritional needs, it can be said that food security has been achieved for the members of that community.

For food security to be achieved in any country, it is measured in three dimensions: First, food availability in markets throughout the country, all year round and in homes; second, the availability of the purchasing power to get food; third, the stability and sustainability of its supplies on a permanent and healthy basis in order to achieve the food's containment of nutrients.

The pursuit of food security, and the lack of it, in Yemen is not something new. Rather, it is one of the chronic issues. It represents the most formidable challenge for Yemen, which has been exacerbating in an unprecedented way. It is of greatest concern for the state and society alike as food gap continues to widen year after year.

If we shed light on the state of food security in Yemen through its three recognized dimensions, we will find that in terms of the first dimension related to food availability, both quantitatively and qualitatively, and in the case of peace and war, we are facing a bleak picture. According to 2009 food security indicators, food insecurity affects 32.1% of the population, which means that about 7.5 million do not have enough food. In addition to the disparity between urban and rural areas, food insecurity in rural areas is 37.3%, compared to 17.7% in urban areas.

Yemen has continued to mainly rely on imports to provide food necessities. Yemen imports 55% of the consumed food and 90% of wheat. The quantities of wheat annually imported are estimated at 3,680,132 tons. Food crisis has been exacerbated more and more by the outbreak of the conflict that has been going on in Yemen for more than seven years. Indicators issued by the World Food Program (WFP) confirm that Yemen occupied the forefront of food crises map in 2018.

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70% Affirm that the Continuation of the Conflict is One of the Most Important Challenges facing Yemen in Achieving Food Security

Sawt Al-Amal (Voice of Hope) - Special

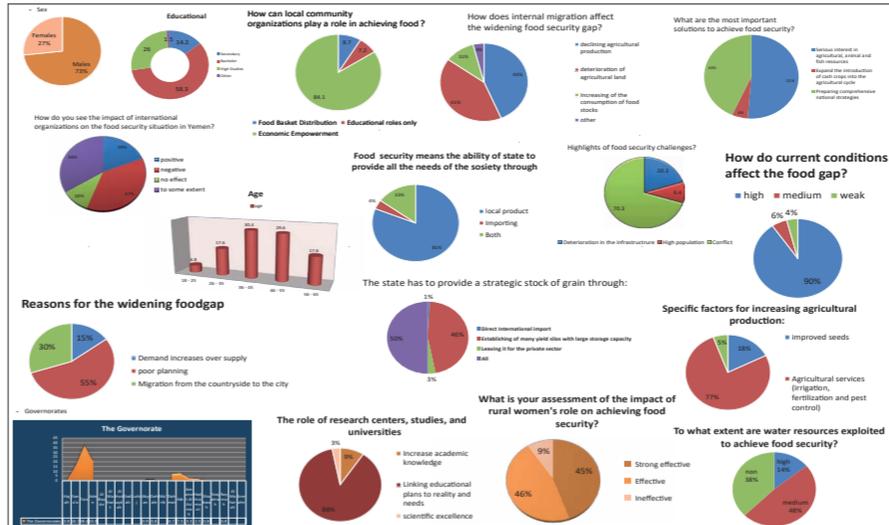
The results of a public opinion poll carried out by the Media Department of the Yemen Information Center showed that the continuation of the conflict is one of the most important challenges facing Yemen in achieving food security, with 70.3% of the participants' opinions.

55% of the participants in a special poll of "Sawt Al-Amal" newspaper believe that poor planning is one of the most important reasons for the widening of the food gap in our country. 90% confirm that the current conditions have greatly affected the widening of this gap. According to the opinions of 51% of the participants, paying a serious attention by all parties concerned with agricultural, animal and fish resources is one of the most appropriate solutions to achieve food security in Yemen.

77% of the participants indicate that agricultural services (irrigation, fertilization, pest control) are among the determining factors for increasing agricultural production in Yemen, and 81% believe that local production only means the state's ability to provide the full needs of community members.

50% of the participants stress the importance of establishing several silos with large storage capacities, working on international direct import, and leaving the matter of providing a strategic stockpile of grain to the private sector.

The results of the poll also show that while 37% view the impact of international organizations on the situation of food security in Yemen is negative, 34% believe that it is to some extent influential. The results also show that 46% believe that rural women have an influential role in achieving food security. Furthermore, 88% affirm that research centers, scientific studies and universities contribute to linking educational plans with reality and needs.



In Numbers... Challenges and Economic Feasibility of Wheat Production in Yemen

Manal Amin - Sawt Al-Amal (Voice of Hope)

Wheat is an important strategic commodity in the process of achieving food security in any country in the world. Wheat is a staple in the Yemeni diet. However, at this critical stage in Yemen history local wheat production has become limited and does not adequately meet the needs of citizens.

In a study issued in 2018 by the sector of Studies and Economic Forecasts at the Ministry of Planning and International Cooperation (MoPIC), Yemen imports more than 95% of the wheat crop from abroad to meet the needs of local consumption and fill the food gap in wheat estimated at more than 3 million metric tons annually. The self-sufficiency rate of wheat has decreased to less than 5%.

According to the study of economic and social developments in Yemen 2018, with regard to "Wheat in Yemen, Growing Food Gap despite Economic Feasibility," results proved moderate economic feasibility in wheat production and thus encourage expanding its cultivation locally. However, in fact, the cost of local wheat production is higher than the cost of imported wheat. Results also stressed that wheat is a strategic commodity linked to national security.

The study also showed that despite the efforts made to expand the agricultural area, no sustainable remedies were provided to address the food gap that remains very large and continues to expand with limited domestic production, growing population and growing demand for imports. This increases the

magnitude of threats to food security in a country where about 53% of the population facing severe acute food insecurity. The amount of import for the wheat crop in 2017 amounted to about 3,379,181 tons.

The latest statistical data indicate a decline in cereal production in Yemen by 130 percent between 2012 and 2017. Grain production, including wheat, gradually deteriorated from 250,264 tons to 95,651 tons for the same period, at an average decline of 16.6% per annum.

Fuel price, production inputs, poor agricultural extension services, and limited financial incentives for farmers stand in the way of increasing wheat production that plays a vital role in supporting food security and fighting poverty in Yemen.

Yemen has become dependent on imports to meet more than 90% of its consumer needs of wheat. This doubles the challenges and threats related to food security and nutrition in a country where about 53% of its population, that is (15.9) million people, suffer from acute food insecurity.

Wheat is a very important strategic commodity for food security in the country, but local wheat production is limited and decreasing, in contrast to the growing consumption needs of the population. The local prices of wheat increased by 377%.

Yemen imports most of the wheat from Australia, America and Russia. The wheat and wheat flour imports' annual bill is currently estimated at over \$700 million. There are only 6-7 active wheat importers in Yemen, which reflects the state of monopoly that prevails in the wheat importing market.



Wheat Production Opportunities

These are rough indicators that give initial impression about the medium economic feasibility in wheat production and encourage expanding its cultivation locally. But in fact, the cost of local wheat production is higher than the cost of imported wheat and its revenues are lower than those of alternative local cash crops such as Qat.

According to an unpublished study on the technical, strategic and economic feasibility of wheat production carried out by the Ministry of Agriculture in 2016, the eastern region and the mountainous highlands (northern and central) are the most promising areas for wheat cultivation in the country.

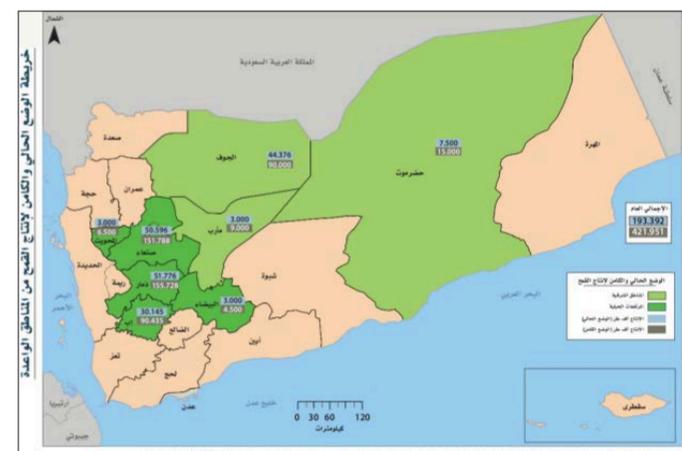
The study added that the eastern region in particular (including Marib, Hadhramaut and Al Jawf governorates) has unique advantages such as the abundance of groundwater and possibility to introduce mechanization in agricultural operations, thereby enabling this region to increase its wheat production by 114,000 tons, more than double the current level (107.7%), without a significant change in the cultivated area

(22.4%).

The study pointed out that there is an unexploited opportunity to increase wheat production in the mountainous highlands by about 122.3% from its current production level, and increase the cultivated area by about 27.6%.

In parallel, the mountainous highlands such as Ibb, Dhamar, Al-Baida'a and Al-Mahweet are characterized by the availability of groundwater sources for irrigation, heavy rains in areas such as Ibb, diverse topography of lands between wide plains and mountain terraces, potentiality to produce wheat in the winter and summer seasons and the high productivity that amounts to about 5 tons per hectare.

Overall, in case of implementing the integrated package of modern production techniques, there is an untapped opportunity to increase wheat production in the promising areas (eastern regions and mountainous highlands) by 118.2% from the current level or by an additional quantity of about 228,559 tons. This will contribute to increasing the self-sufficiency rate of wheat throughout the country to 12.4% compared to



the current estimated rate of 2.8%, decreasing the import bill and the trade balance deficit to \$57-69 million per year and generating many employment and income opportunities for farming households.

The study estimated the total revenues of wheat production (in the irrigated sector) per hectare at \$2,700 in 2016, while the total cost was estimated at \$1,750. Thus, the net return reached \$950, and the proportion of costs to revenues was 65%.

The study also noted that no matter how modest the results are, wheat remains a strategic commodity that is associated to the security of the country and the independence of the national decision, which requires dealing with the wheat food gap from a strategic perspective in the short, medium and long term,

focusing not only on vertical expansion in productivity but also the horizontal expansion in cultivated area to influence the consumption patterns, enhance the status of the agricultural trade balance by increasing the production and exports of crops of comparative advantage, while reducing the production and consumption of Qat, which consumes about 30% of the water used in agriculture and expands each year at the expense of other crops despite its health and environmental risks and economic losses.

The study recommended to redirect the international humanitarian aid programs to take into account the support and motivation of Yemeni farmers and ensure that their productive role is strengthened against crises and is transformed from a food aid consumer into a producer of necessary crops.