

# Strategic Analysis Paper

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## Iran's Food Security

**Soazic Heslot**

*Research Assistant*

*Global Food and Water Crises Research Programme*

### Key Points

- Iran is in the middle of a nutrition transition. Although the number of people suffering from hunger is lower than ever before, changing dietary patterns are leading to increased incidences of obesity.
- The government's goal of agricultural self-sufficiency is unlikely to be achieved; international trade remains essential to feed the population.
- Underinvestment, outdated production practices and unfavorable climatic conditions, limit Iran's agricultural production. The sector has long been neglected and requires increased investment and modernisation.
- International sanctions are impacting on Iran's economy and threatening its food security.

### Summary

Despite considerable economic progress and transformation in the last 30 years, Iran faces a number of issues that threaten its food security. At the individual level, it is experiencing a nutrition transition. The number of people experiencing hunger is lower than ever before, but, changing dietary trends are leading to increased rates of malnutrition and obesity. Iran's reliance on international trade increases its vulnerability to external volatilities, especially as sanctions limit its oil revenue. The agricultural sector suffers from underinvestment and arid climatic conditions limit productivity. Broad economic reform is necessary and has been initiated in some sectors; however, the chances of success are hampered by the intricate economic and international contexts.

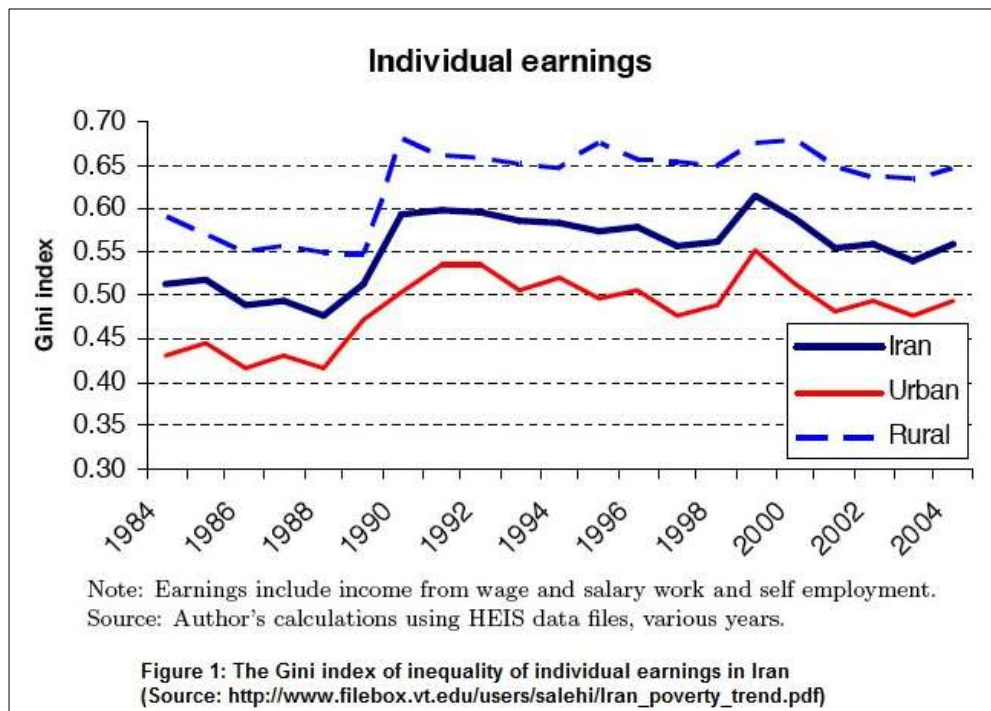
## Analysis

Iran is the second largest country in the Middle East, after Saudi Arabia. The World Bank describes the state as ‘an upper-middle income developing country’. Limited agricultural production and increasing incidences of malnutrition and obesity are creating challenges for Iran’s long-term food security. More significantly, ongoing international sanctions exacerbate inflationary trends and impact access to food and its affordability.

### Population & Demographics

With a population of approximately 77 million people, Iran has a growth rate of one per cent a year and a fertility rate of 1.6 children per woman. In the 1980s Iran developed policies to promote birth control, in an attempt to slow population growth and reduce subsidy demand. The urban population density is similar to that of OECD countries; the urban population (70%) is expected to grow by 1.3% between 2010 and 2015. In comparison, Australia’s urban population is expected to grow by 1.5% between 2010 and 2015.

There are considerable wealth and income disparities in Iran. Inequality, determined using the *Gini Index of Inequality*<sup>1</sup>, is high compared to the average for the region. The Index is commonly used to determine the level of inequality in an economy. In this measure, the closer to the number one a coefficient is, the more inequality there is (See Figure 1). Iran’s Gini Index coefficient was 0.445 in 2006; by comparison, Egypt’s was 0.321 in 2005. The inequalities are even more obvious when we compare rural and urban populations. Rural regions are largely excluded from economic development and struggle with higher levels of poverty.



<sup>1</sup> The Gini coefficient is the most commonly used measure of income inequality.  
<http://data.worldbank.org/indicator/SI.POV.GINI>

Unemployment is also high, reducing the income available to purchase a healthy food basket. This may lead to an increased dependence on cheaper, less nutritious food; exacerbating current nutrition and health trends in Iran. The unemployment rate is around 12% according to official statistics. Youths are particularly affected by unemployment and are more vulnerable to food insecurity. Between 30% and 40% of its youths are unemployed.

### **Hunger in Iran and dietary trends**

There have been major improvements over the last three decades in reducing food insecurity in Iran. Since the 1990s, the number of people suffering from hunger has steadily declined. The [Global Hunger Index](#) (GHI), measured by the International Food Policy Research Institute (IFPRI), shows a steady and encouraging downward trend. Iran's GHI score is now under five, down from a ranking of 8.5 in the 1990s. Iran has had the greatest reduction in GHI ranking in the Middle East.

A nutrition transition is also taking place in Iran. The traditional diet is based on wheat, fruits and vegetables, but consumption of fruits and vegetables has dramatically decreased. Iranians, now consume more sugar, fat and oils. This shift is not only linked to income, but also to a deeper change in dietary habits. Today, 55% of women and 38% of men in Iran are considered obese or overweight; creating major public health concerns. Malnutrition is another repercussion from dietary changes. Micronutrient deficiencies are prevalent in Iran, especially iodine and iron deficiencies; related diseases, such as iron-deficiency anaemia, are widespread.

The number of children under five who are underweight has dropped from 16% in 1988 to 4.1% in 2012. There is still a problematic number of stunted children in Iran, but the general trend is positive. It is likely that those numbers will decrease again over the next few years, due to wider improvements in Iran's sanitary status. In 2014, life expectancy at birth in Iran is 73 years, compared with 57 years in 1977. The mortality rate for children under five has also radically decreased: from 6.1% in 1990, to 2.5% in 2011.

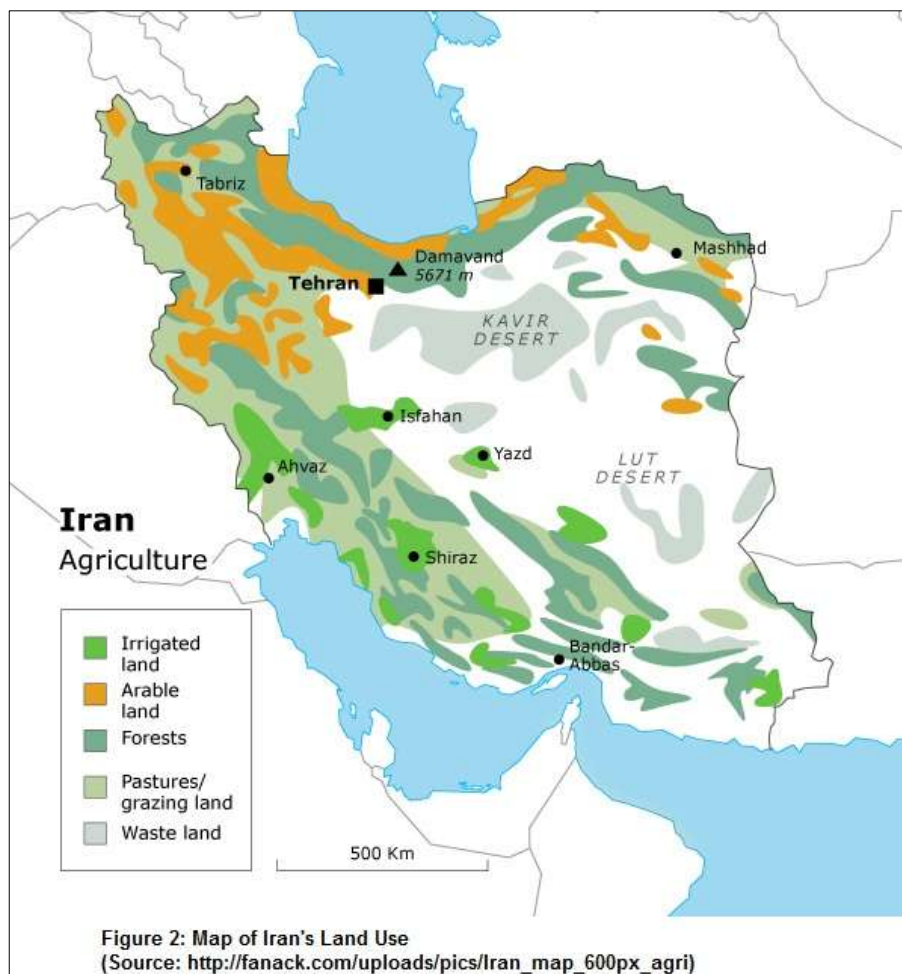
The refugee populations in Iran face the greatest vulnerability to food insecurity. The Iranian government's focus on returning them to their countries of origin is making it increasingly difficult for refugees to gain legal status and access basic services. About 840,500 Afghan and 45,000 Iraqi refugees face acute food insecurity and are currently receiving assistance from the World Food Programme (WFP).

Ethnic and religious minorities are also more exposed to food insecurity than the average population. Iranians are mainly of Persian ethnicity and practicing Shia Islam. Ethnic minorities in Iran include Arabs, Azaris, Baluchis and Kurds. Religious minorities include mainly Sunni Muslims, Jews and Christians. The government often [discriminates against the members of these populations](#). Minorities in Iran also experience greater rates of unemployment and poverty. As a result, minorities are more likely to experience situations of food insecurity.

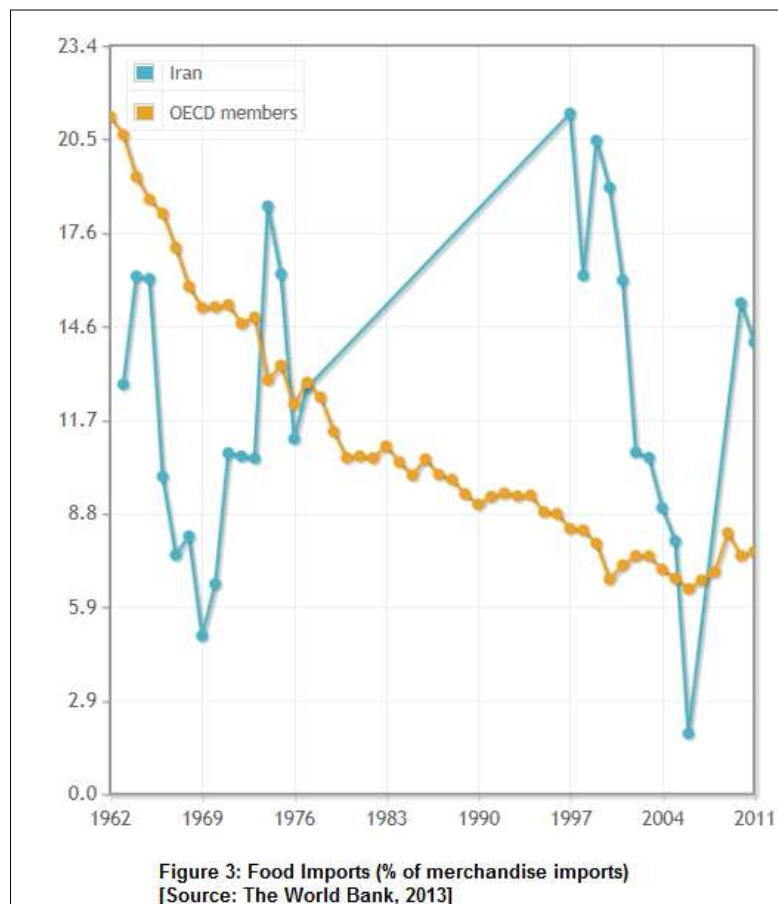
## Food production and reliance on international trade

Iran main products are wheat, nuts (dates, pistachios, walnuts and almonds), sturgeon (used to make caviar), tomatoes, meat and milk. It is the world's leading exporter of pistachios and caviar. Other important exports are spices, fruits and vegetables. Iran's major export partners are China, India and Turkey. Its exports continue to face limitations on their markets, due to the ongoing economic sanctions from the international community. This has the dual effect of hampering Iran's economic growth and limiting potential income for food producers.

Due to climatic and topographic conditions, agricultural production is limited to a few varieties of products and a limited number of production areas (See Figure 2). Only 11% of Iran's land is cultivable. The specific configuration of the country prevents agricultural expansion. Iran's land for the most part is either desert or very mountainous. The main agricultural areas are the Caspian Coast, the mountain valleys in the northwest and the Karun River basin. Soil salinity and [water scarcity](#) further prevent increases in productivity in the agricultural sector.



Self-sufficiency has been at the centre of Iran’s food policies since 1979. More specifically, self-sufficiency in wheat, Iran’s staple food, is crucial. In 1979, Iran imported 65% of its food; but it now produces 66% of its food basket, according to the [United States Institute of Peace](#). The country has managed to reverse the upward trend of import dependence, but still needs to import a significant amount of its food. In 2013, for example, Iran imported \$214 million worth of wheat. Major imports include maize (3,644,664 tonnes imported in 2011), soybeans and meat. Imports come primarily from the United Arab Emirates (UAE), China and Turkey. Compared to OECD countries, food imports constitute a very large share of total imports (See Figure 3). The country can be deemed food insecure when considering its limited ability to produce food; however, food imports have mitigated this insecurity. Despite an increased vulnerability in the food system, Iran can still, at present, import the food it needs to feed its population.



### Iran’s Agricultural Sector

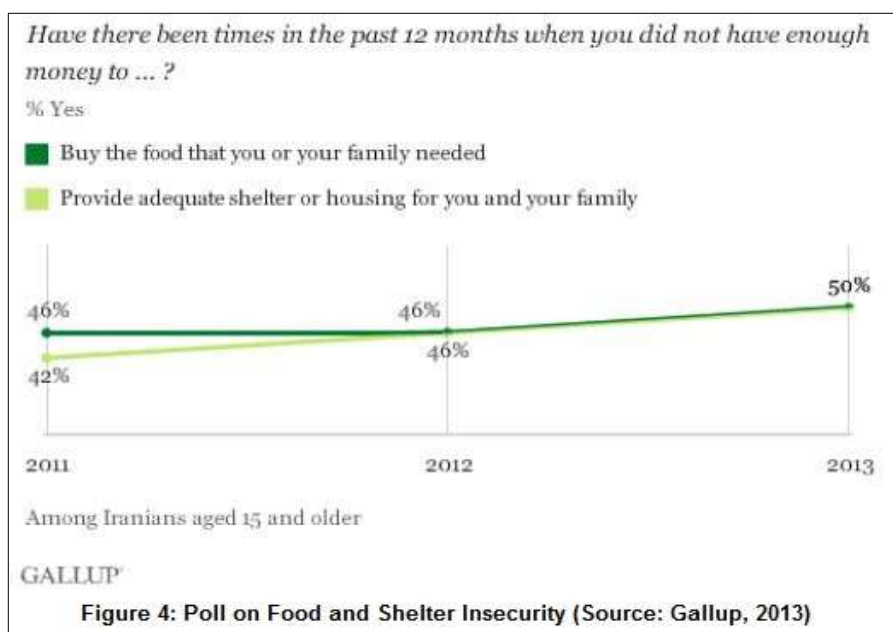
Iran’s trade balance remains positive. It derives its main revenue from oil exports and relies heavily on the energy sector. For this reason, agriculture has been neglected and investment has focused on the oil and gas sector. Considering food alone, however, the trade balance would be negative. This over-reliance on the energy sector leads to an increased vulnerability to external influences when international sanctions are intensified.

Agriculture in Iran is very [inefficient](#) and faces several difficulties. The equipment and methods are outdated. Insufficient fallow periods have led to land overuse and less fertile soils. Iran has progressed a lot in its use of fertilisers, but, [according to the FAO](#), the correct application of fertilisers could increase yields by 60% without expanding the cultivated area. It is also crucial that the mechanisation of the agricultural sector continues to develop. Farmers currently use obsolete methods of irrigation, which contribute to an [acute water inefficiency problem](#).

Recent advances in Iranian agriculture could help the country increase its self-sufficiency. Most notably, Iranians now grow and consume [genetically modified rice](#), which is more resistant to insects. This could help the country revive its dwindling agricultural sector. Several experiments to expand GM crop use are ongoing. The introduction of other GM crops is expected later in 2014. For example, Iran at the moment is discussing launching a salinity and drought resistant wheat. This kind of initiative may help overcome natural obstacles in production and lower Iran’s dependence on international trade, but this still requires large investments.

### Impact of international sanctions on Iran’s food security

International sanctions on Iran have had a huge impact on the health and food security of the population; with middle-class and poorer households particularly hurt. Inflation caused by the sanctions has raised the prices of goods in Iran, resulting in increases in the purchase and consumption of cheaper, less nutritious food. This has accelerated a change in diets. People now consume less meat, fruit and vegetables as they have become too expensive. Between March and July 2012, the price of the average food basket increased by 71%. In the summer of 2013, red meat cost 43% more than in the summer of 2012. The most significant changes in price affect fruit (+79%) and vegetables (+86%). Wealthy households and government officials are not affected by this change. For the middle and lower classes, however, living conditions are deteriorating and the number of people facing difficulty in accessing food is rising (See Figure 4).



## International sanctions against Iran

In 1979 following the ousting of the Shah, the US imposed [sanctions on Iran](#). The severity of the sanctions increased when suspicions about the Iranian nuclear programme were confirmed. The sanctions predominately involve embargos on oil and military equipment. In 2005, the UN also imposed sanctions, which are still in force today. The EU sanctions in 2012 have had the greatest impact on the Iranian economy. The EU accounted for 20% of Iranian oil exports and its removal from the Brussels-based Swift financial network in 2012, is the likely cause of increased economic strain in recent years. Swift is a network used worldwide for international transfers of money. At best, [payments are complicated](#), but often Iranian businesses simply cannot complete transactions through official channels. Thirty major Iranian banks were removed from the Swift network. This has led to a reliance on unofficial trade routes and made it harder for Iran-based companies to sell oil and other products abroad.

Sanctions have also impacted on the agricultural sector. Farmers face limitations on selling their produce beyond Iran's borders, which reduces potential profits. With limited profits available in the farming sector and little investment from the Iranian government, the sanctions are hindering economic development and growth in the agricultural sector.

This has led to a considerable decline in Iran's GDP and oil exports more than halved between 2011 and 2013. The national currency, the rial, has lost two-thirds of its value, while inflation has skyrocketed. The loss of revenue from oil exports has resulted in significant cuts in Iran's budget. The losses are estimated to be between US\$4bn and US\$8bn per month. In 2011, Iran exported 2.2 million barrels of oil per day. By May 2013, this had dropped to 700,000 barrels per day. Although trade is not prohibited, sanctions have had a deterrent effect on business in general. Official channels cannot be used for transactions and investors are increasingly cautious when it comes to establishing business relations with Iran. The general deterioration of the economy has increased the population's reliance on the state to fulfil their most basic needs.

The sanctions are widely criticised for their impact on the poorest and most vulnerable sections of society. They have, in the past, had little or no effect on regime change nor have they curbed a regime's position; for example, in Cuba or North Korea. According to a [study](#) by the Peterson Institute for International Economics, in two-thirds of cases sanctions don't produce the expected foreign policy results. In Iran, this is clearly the case. In almost 40 years, sanctions have failed to have a major impact on Iran's nuclear programme and policies. Instead, they continue to threaten the livelihoods and food security of civilians. In

November 2013, the P5+1<sup>2</sup> decided to ease the sanctions and an interim deal was finalised. Iran will recover some of its frozen assets abroad, but the majority of sanctions remain in place. This slight improvement, however, is likely to assist with a limited recovery of Iran's economy and may ease high food prices. This, in turn, will help to increase its food security.

### **Food and agricultural policies in Iran**

Iran began using subsidies during the Iran-Iraq war in the 1980s, to assist with the provision of food and resources for its population. Since the war ended, several Iranian governments have attempted to put an end to subsidies, but none have succeeded. The subsidies, mainly for energy and food, are an economic burden; in 2009, they cost between US\$70bn and US\$100bn, or about 25% of Iran's GDP. They also encourage wasteful behaviour and contribute to the generation of pollution. Subsidies have not been targeted and everyone, regardless of income, can benefit from them. This has led to a significant increase in government expenditure and those most in need of assistance often miss out. The top 30% of wealthy Iranians receive from 70% of the government subsidies. With a growing population and shrinking budget, the system requires considerable reform to solve the problem.

The reduction of subsidies was an attempt to reform Iran's economy and shift towards a more liberalised economy. The government no longer ensures low prices for energy products. This was requested by the IMF and the World Trade Organization (WTO), to meet the eligibility standards to join the WTO. The impact of inflation, along with the removal of sanctions, is particularly hard on civilians. In the long term, however, reform is necessary and will enable increased economic stability and sustainability. Iranians adjusted quickly to the price rises associated with subsidy cuts and inflation, due, in part, to an efficient switch to cash-handouts and a well-executed public information campaign. Likewise, this progressive liberalisation could help Iran regain its competitiveness and support further easing of sanctions.

Agricultural policies in Iran have been included in its Five Year Development Plans (FYDP) since 1990. The latest FYDP runs from 2011 to 2015 and includes a goal for agricultural self-sufficiency. The government seeks to boost production with government assistance and tax exemptions for farmers, along with short-term credit facilities. Iran is also attempting to bolster its international trade, by increasing its share of non-oil exports. Protections are in place for the agricultural sector, with the use of tariff and non-tariff barriers against imports. These are, however, progressively being reduced. Other objectives of the FYDP are environmental protection and support for science and technology, which could benefit the agricultural sector. While physical limitations of arable land and water will prevent Iran from achieving full agricultural self-sufficiency, policies directing increased investment and resources into the agricultural sector will increase its sustainability and food security. This, in

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<sup>2</sup> P5+1: The name given to the group of countries in negotiations with Iran over its nuclear programme. The name refers to the five permanent UN Security Council Members (China, Russia, the United States, France and the United Kingdom) plus Germany.

turn, will reduce Iran's vulnerability to external volatilities within the international food system.

### **Conclusion: Forecast to 2025**

Iran faces considerable pressures and economic limitations. The reforms now begun must be pursued and expanded, despite their short-term impacts. A comprehensive strategy on food must include reviving the agricultural sector, strengthening the economy and adjusting to international sanctions, while also reducing the undesirable effects of the nutrition transition. This will require those in power to take a step back and redefine their perspective on the issue, looking at long-term sustainability rather than short-term development initiatives. For instance, looking at the overall productivity and sustainability of the agricultural system, rather than continuing to divert water for inefficient irrigation.

Because of its dependence on international trade and its very poor agricultural sector, Iran can be considered food insecure. The food supply is sufficient, but Iranians often cannot afford to buy enough food due to rising prices. A sustainable policy on food for Iran needs to take these factors into account. But this policy cannot be disconnected from a larger and more sustainable shift of focus, summarised in the following points.

#### *1- The need for a more comprehensive policy on food*

To reduce the negative effects of the nutrition transition Iran is facing, the implementation of a comprehensive policy on food is essential. Along with the reduction of subsidies, raising awareness about food wastage and healthier diets is essential, to prevent obesity and micronutrient deficiencies. Efforts to reduce hunger, child malnutrition and child mortality must also continue to achieve greater national health outcomes.

#### *2- Reviving the agricultural sector*

The agricultural sector is critical to Iran's economy, providing 23% of national jobs and constituting 11% of the GDP. Significant investment is necessary for this sector to become more efficient and competitive. Iran will never achieve full agricultural self-sufficiency; however, improvements are possible to reduce the dependence on international imports. Encouraging modernisation to increase water efficiency in agriculture by using new irrigation systems is critical. Reviving the agricultural sector also means promoting alternative methods of production. The development of GM crops shows that investment is being made in research and development. This needs to be pursued and expanded upon. Decision makers should pay more attention to the development of environmentally-friendly practices. According to the [2014 Environmental Performance Index](#), developed by Yale and Columbia Universities, the country ranks 83 out of 178 countries. Iran therefore faces challenges in confronting pollution and environmental protection and further commitment is required if it is to be successful.

#### *3- The essential reform of the economy*

Iran is in a critical state, with unsustainable rates of inflation, growing unemployment and the worrying loss of value of the rial. Early in his term, President Rouhani seems to be

moving in the right direction for reform. The end of energy subsidies, for example, was [welcomed by the IMF](#) as a first step towards a more viable economy and budget. Deeper reforms in the economy, however, are necessary. The recent easing of sanctions should make it easier for Iran to reform itself, decreasing the impact of subsidy cuts on the population.

#### *4- Dealing with the international context*

At the heart of Iran's challenges is the international influence on the Iranian economy. Ongoing sanctions are impacting on Iran's economic growth and stability and thus on its ability to achieve long-term food security. In neighbouring countries, economic prosperity has given them the ability to address their limited natural resources (arable land and water) and develop strong programmes to maintain food and water security for their populations. Iran has been prevented from doing the same. In this regard, the international community should consider adjusting the sanctions, as those who suffer most from them are the members of the civilian population, rather than those who make the political decisions. The more peaceful relations between Iran and the P5+1 since the interim deal, will hopefully lead to a broader easing of sanctions and to less food insecurity. If other countries resume their trade with Iran, it would make food more affordable, reduce Iran's overall vulnerability in terms of food security. This could also help generate more revenue for investment in the agricultural sector.

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80 Birdwood Parade, Dalkeith WA 6009, Australia.  
Tel: +61 8 9389 9831 Fax: +61 8 9389 8803  
E-mail: slehane@futuredirections.org.au Web: www.futuredirections.org.au