

## Everything you always wanted to know about potatoes

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HARUN K.M. YUSUF

RECENT research indicates that the first potatoes were cultivated near Lake Titicaca, on the Peru/Bolivia border in the Andes, about 8,000 years ago. The potato belongs to the Solanaceae or nightshade family whose other members include tomatoes, eggplants, peppers, and tomatillos. A potato is the swollen portion of the underground stem, which is called a tuber and is designed to provide food for the green leafy portion of the plant.

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In terms of quantity harvested, the humble potato tuber is the world's No. 4 food crop after maize, wheat, and rice, with production in 2007 of more than 320 million tons. More than half of that was harvested in developing countries.

Though the tuber was productive and hardy, the Spanish put it to very limited use. In the Spanish colonies potatoes were considered food for the lower classes; when brought to the Old World they were used primarily to feed hospital inmates.

It took three decades for the potato to spread to the rest of Europe. Even so, it was cultivated primarily as a curiosity by amateur botanists. Resistance was due to ingrained eating habits, and the tuber's reputation as a food for the underprivileged and, perhaps most importantly, its relationship to poisonous plants.

As time passed, more and more of the nutritional values of the potato were revealed. Soon, the potato gained wide acceptance across

Europe, and Irish farmers became almost totally dependent on it for their livelihood.

The terrible potato disease, caused by the fungus *Phytophthora infestans*, caused a disastrous blight in Ireland in the 1840s. Known as the Potato Famine in Ireland, it cut the population by half (through both starvation and emigration). Potato eventually made its way back over the Atlantic to North America. As time passed, the potato became one of the major foods of the world.

### Potato production

The world potato production scenario has been undergoing rapid changes in the last decades. Until the early 1990s, most potatoes were grown and consumed in Europe, North America, and countries of the former Soviet Union.

After that, there has been a dramatic increase in potato production and demand in Asia, Africa and Latin America, where output rose from less

than 30 million tons in the early 1960s to more than 165 million tons in 2007.

Data shows that in 2005, for the first time, the developing world's potato production exceeded that of the developed world. China is now the biggest potato producer, and almost a third of all potatoes are harvested in China and India. In 2007, potato farmers produced more than 320 million tons.

In Bangladesh, production of potato was almost stagnant since the 1970s until 1998-99, when the production began to increase. In the 10 years between 1999 and 2008, Bangladesh's potato production increased 5 times, with an estimated production of more than 80 lakh tons this year.

### Nutrition in potato

Potato has a number of nutritional specialties that are good for health and wellbeing. Most significant of these are its relative richness in calories, vitamin C and potassium. A fresh potato tuber, which is more than 72 percent water, contains, per 100g weight, about 100 kcal, 2.3g protein, 30mg vitamin C (freshly harvested) and 418mg potassium. It contains significant amounts of other vitamins (e.g. niacin) and minerals (e.g. magnesium, zinc), but

is very low in sodium. The starch from which the calories come is easily digestible, like that of well-cooked rice, and is, thus, very helpful for quick energy supply.

Although low in quantity on fresh weight basis, the protein in potatoes is of high quality, with the essential amino-acid composition comparable to that of egg and milk and better than the proteins of rice and lentils. The maize protein is one of the worst in quality. Indeed, a six-ounce potato (170g) contains 3 grams of high quality protein, almost as much as half a glass of milk.

The high potassium and low sodium in potato makes the tuber an ideal food for people suffering from hypertension. Potassium is also essential for attaining optimal muscle performance and improving the nerves' response to stimulation. Since vitamin C is very unstable, the original content of 30mg may go down to only 8mg after storage of 9 months. The vitamin is also lost if cooking takes a long time.

Cooking potatoes unpeeled conserves most of the vitamin B and C, and the salts. Peeling a potato and cutting it into pieces before it is boiled reduces its vitamin content considerably. If cooked potatoes are reheated there is a further loss of vitamins.

A potato with the skin on is an excellent source of fibre. Instead of throwing away the potato peel, it is better to eat it, because it is rich in mineral elements. At least 60 percent of the potassium contained in the potato lies so close to the skin that it cannot be saved if the potato is peeled.

### Policy implications

The potato should be a major component in policy strategies aimed at providing nutritious food for all, rich and poor alike. As it is ideally suited to places where land is limited and labour is abundant, conditions that characterise many of the developing countries like Bangladesh, potato should be a crop of choice in these countries.

Indeed, potato produces more nutritious food more quickly, on less land, and in harsher climates than any other major crop.

Time series data of the Bangladesh Bureau of Statistics (BBS) shows that in Bangladesh, between 1991 and 2005, consumption of rice decreased by 30g per capita per day while consumption of potato increased by about 20g (see figure below).

During this period, consumption of other food items like meat, egg, fruit, and vegetable also increased



They taste good, do good.

somewhat, indicating a positive move towards dietary diversification, slow though it is, in commensuration with economic growth and poverty reduction that have been achieved in any other major crop.

Given the present domestic and international rice market situation, and also considering the high potential for potato production in the country, we can easily turn our attention somewhat more towards the "humble" crop which gives us so much of nutrition and health benefits. We can possibly increase our potato consumption from 60g to 120g a day very easily and make it a part of our daily diet as rice is.

Over the next two decades, the population of Bangladesh is expected to double, where pressure on land and water is already intense. A key challenge facing the government is, therefore, to ensure food security for the people, particularly the poor.

The potato will be an important part of efforts to meet this challenge. Let's make the United Nations International Year of the Potato 2008 a success.

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## Challenges of climate change

Climate change is one of the greatest environmental, social and economic threats that the planet faces at the moment. Scientists say that the earth's average surface temperature has risen by 0.76°C since 1850 when reliable records began. Eleven of the 12 warmest years worldwide since 1850 occurred between 1995 and 2006. The Intergovernmental Panel on Climate Change (IPCC) projects that, without further action to reduce greenhouse gas emissions, the global average surface temperature is likely to rise by a further 1.8-4.0°C this century, and possibly by as much as 6.4°C.

FAHMIDA KHATUN

RECENTLY, a n advertisement showed how super-models are trying to promote an eco-friendly lifestyle through their outfits made with materials that are less polluting, less harmful to the environment and the earth, which, in other words, is called a green method of living.

Comparing black, a trendy colour for evening parties, with this green way of resource utilisation is not only interesting but also reflects the fact that global environmental issues -- climate change to be precise -- have caught the attention of everyone.

### The problem

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There was a 70 percent increase in emissions of greenhouse gases between 1970 and 2004. In the energy supply sector, the increase was 145 percent. The increase from transport was 120 percent and from industry 65 percent.

### Why does it happen?

The atmosphere contains water vapour, carbon dioxide (CO<sub>2</sub>) and

other naturally occurring gases that let in sunlight but absorb the heat that is radiated back off the earth.

Called the "greenhouse effect," this keeps the earth's temperature at a level that supports life. Without it, the global average temperature would be too low to support life.

However, most of the warming that has occurred over the last 50 years or so is very likely to have been caused by human activities such as the burning of fossil fuels and the destruction of forests to make farmland.

These activities are increasing the levels of CO<sub>2</sub> and other heat-trapping gases in the atmosphere, which is enhancing the natural greenhouse effect, making the earth warmer and changing the climate.

Other contributors to global warming are methane emitted by disposing of waste in landfill sites or the emissions caused by excessive fertiliser use, but fossil fuel use and deforestation are the main culprits. To bring climate change to a halt, global greenhouse gas emissions must be reduced significantly.

### Implications for poor countries

The impact of climate change will be felt differently by different countries.

While the Europeans think that their skiing holidays in the Alps may become a thing of the past, people from least developed countries have to think of their food and energy.

Bangladesh will be affected by inundation of land area, displacement of people and loss of gross domestic product due to sea level rise.

Hence, for poor countries climate change and poverty are two intertwined challenges to be addressed simultaneously. The impact of climate change on agriculture and disease patterns will only worsen the poverty situation of poor countries.

That is how climate change also poses a significant threat to the achievement of the Millennium Development Goal (MDG) of the United Nations, which sets environmental sustainability as one of the eight MDG goals.

Exploitation of natural resources has harmed those who depend on them for their livelihood. Hence, the onus of reducing carbon emission is on the developed countries.

### Who should lead the way?

Leading industrialised countries

and large developing countries such as China, India, Brazil and Indonesia are responsible for about 80 percent of all greenhouse gas emissions.

If global emissions are not stabilised, with industrialised countries cutting emissions, the impact of climate change cannot be avoided.

It has been estimated that if developed countries agree to cut their collective emissions by 30 percent by 2020, annual economic growth would be trimmed by less than 0.2 percent.

This is only a small sacrifice to avoid the potential long-term costs of climate change. The benefits of reduced air pollution, sustainable energy use, and innovation of green technologies would be enormous.

These benefits will outweigh the economic costs of emission reduction, as more efficient use of energy in everyday life can ensure a sustainable development. The intrinsic value of a green environment is also invaluable for the future generation.

Many European countries are going for innovation, whereby low or zero carbon energy technology will be devised in order to address climate change. A program like "Intelligent Energy -- Europe" (IEE) is an example. Other developed

countries should also follow such initiatives.

### Who should do what

Because of the disagreement in the past, countries are looking forward to an international agreement during the United Nations' Climate Convention meeting due in 2009.

Such an agreement should include deep emission cuts by the developed countries, which must be by 25 percent to 40 percent by 2020 to avoid catastrophic climate change.

Tropical forests act as carbon sinks that absorb carbon dioxide. Hence, reversing of deforestation is essential for tackling climate change. Developed countries should also meet their aid commitments to achieve MDGs, and provide additional aid for adaptation measures for dealing with climate change and transfer existing and new adaptation technology.

Poor countries should ensure rights to land, forests, water, energy and livelihood for their poorest people, integrate climate change initiatives into national MDG-based plans, and prioritise renewable energy resources.

UK's Environmental Transformation Fund (ETF), the US's proposed Clean Technology

Fund and Japan's Cool Earth 50 are a few initiatives for reducing carbon emission.

Recently, the World Bank proposed a \$ 7-12 billion portfolio for three specific climate investment funds -- the Clean Technology Fund, the Forest Investment Fund and the Adaptation/Climate Resilience Pilot Fund -- along with a Strategic Climate Fund to deliver donor financing for climate change mitigation and adaptation projects.

Such initiatives should follow the existing multilateral commitments under the United Nations Framework Convention on Climate Change (UNFCCC), which states that developed countries should provide new and additional financial resources to meet the agreed costs incurred by developing countries in meeting their climate change commitments.

Most importantly, in order to make such initiatives beneficial for developing and least developed countries, governments will have to ensure that the proposals for climate change financing are opened up to wider ownership and engagement from all stakeholders.

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## Gram sarkar and local government election

With the abolition of the Gram Sarkar, we expect a lot of reforms in the local government system will take place. The process of strengthening the local government institutions and empowerment of local bodies should be completed as quickly as possible, in accordance with the recommendations of the committee constituted for the purpose.

DHIRAJ KUMAR NATH

WITH the approval of Gram Sarkar (Rescission) Ordinance, 2008, about 40,000 Gram Sarkars officially existing so long as the lowest tier of the local government stand abolished. In fact, when the Gram Sarkar Bill, 2003 was placed before the parliament on February 26, 2003, about 11 MPs participating in the debate demanded eliciting of public opinion on the Bill prior to its approval as an Act. There was also demand for a referendum on the formation of such a vital tier of the local government, limiting the authority of the Union Parishad.

Even in May, 1980, when *Swanirvar Gram Sarkar* came into being, Capt. Abdul Halim, the then minister in charge of local government, and the people, by and large, were sceptical about the motive behind such a move to reform the grassroots level representation.

The functions of *Swanirvar Gram Sarkar*, as prescribed, were food production, formation of village based cooperatives, mass literacy, family planning, and maintenance of law and order.

These were found acceptable but overlapped with the *union parishad*, and the confusing charter of rights and obligations generated resentments among the *union parishad* members.

Thus, *Swanirvar Gram Sarkar* could not last long. Even the *Gram Parishad* constituted in September 1997, could not see the light of the day due to some shortcomings detected earlier.

Participatory governance at the grassroots level is usually considered a means of strengthening the local government with delegation of authority to plan decisions for effective management of public functions. But it is necessary to take extra precautions prior to its implementation.

When the Bengal Village Choukidari Act, 1870 and the Local Self Govt. Act of 1885 were promulgated, the British government examined the implications for a long time although there was nobody to protest and find the EC to organise such elections.

The Election Commission, under this Article, is empowered to hold the election of president, members of the parliament, members of the local government, and the local government election.

Some of the local representatives have drawn the attention to Article 119(2) of the Constitution, which says the Election Commission can exercise the power of the election of the local government.

Those who were in favour of holding local government election before the parliament election put forward the argument that election of non-political, honest, competent, educated, and dedicated social representatives would be possible provided the local government elections were held earlier.

Besides, the probability of false voting, the tendency of debarring the voters, and creating confu-

sion about the result declared will be reduced.

Those who opposed the idea of earlier election of local bodies expressed the view that the election of *union parishads* or *upazila parishads*, if organised after the parliament election, would create opportunities of effective cooperation between parliament members and local level representatives, and reduce the costs.

According to them, the national government, after assuming power, would try to supersede many chairmen and members not found suitable to them and, thus, create total confusion. Another important point raised by them is that many people will not feel comfortable to participate in the election during the time of emergency.

It is common to have difference of opinions on such a vital national issue. But it is necessary to see whether the election of local bodies -- 4498 *union parishads*, 480 *upazila parishads*, 390 municipal societies, and 6 city corporations -- could be held in one day, or with the parliament election. No, not at all. Definitely, the elections have to be held in phases for days together, which might take more than a month. So the process should begin early.

Local level bodies' elections are not new in Bangladesh. After independence, parliament elections were held 8 times, president elections were also held 8 times, and referendums took place three times -- on May 3, 1977, March 21, 1985, September 15, 1991.

*Union Parishads* elections were held 7 times, city corporation election 5 times, municipal

elections 7 times and *upazila parishad* elections 2 times.