Will the growing demand for biofuels lead to food crisis?

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Why “fuel vs. food” debate?

- *"The competition for grain between the world's 800 million motorists, who want to maintain their mobility, and its two billion poorest people, who are simply trying to survive, (biofuels) is emerging as an epic issue”* - Lester Brown, Worldwatch Institute.

- *“Land that was once used to grow food is increasingly being turned over to biofuels. This may help us to fight global warming - but it is driving up food prices throughout the world and making life increasingly hard in developing countries.”* – The Guardian, 29 August 2007

Why "fuel vs. food" debate?

"The development of new technologies, combined with yield improvements, point to the opportunity to produce more food and more fuel—" Patricia Woertz

- *"Claims on higher consumer food prices in the popular press are exaggerated…Energy prices and increasing retail margins are competing explanations for the rising food prices."* John Beghin (2007)
- *"The world has enough capacity to grow all the food that is needed as well as large amounts of biomass for energy use, but not in all countries and regions"* Peter Hazell (2006).

What is “fuel vs. food” debate about?

The effects of moving “TOO FAST”

and

The cost of “INACTION”

Moving too fast

- Brazil has set targets that all diesel contain 2% biodiesel by 2008 & 5% by 2013
- America has an aggressive scheme to replace 15% of the petrol-powered cars with "green-fuel" vehicles
  - AIM: By 2020, to reduce petrol consumption by 20%.
- The EU Directive sets a 5.75% biofuels share in all transport fuel by 2010.
- ASIA- China, Japan, Malaysia, Indonesia & India have also set mandatory blending targets.
- AFRICA –A little slow & sceptic??
  - Few, countries have mandatory targets (South Africa, Malawi)

Moving too fast: Implications

- Across the US, 20% of the whole maize crop went to ethanol in 2006,
  - BUT, contributed only 2% of automobile fuel use.
- An extra 80 mn. acres (36 mn ha) of land will be required if maize ethanol alone will be used to meet the US target.
  - Eliminating gasoline use entirely in USA will require doubling the current 450 mn. acres (200 mn ha) of available for crop production- making it infeasible!
  - China will need 22.7 mn. metric tonnes of biofuels to blend 10% biofuel into all Chinese cars by 2020.

Moving too fast: Implications

- Japan will need 6 bn. litres of ethanol every year to meet the blend ratio of only 3% biofuels.
- EU Directive- about 18.6 mn. tons of oil equivalent of biofuels will be required to meet the 5.75 target
- THE BIG QUESTION: How will these targets achieved?
  - AFRICA?

The fast pace & food crisis

- Meeting targets in biofuels share in transport fuels will require large-scale production of energy crops-AFRICA as a TARGET
  - displacing of croplands currently used for food crops for growing energy crops
  - clearing of virgin forests for growing energy crops
- **The looming food crisis- reduction in global food supply**
  - reduction in food aid for hunger stricken countries
  - increase in prices for other crops that compete for the same land or those whose ingredients are also used for biofuels
- OECD predicts food price increases of between 20% and 50% over the next decade if food crops are to used for biofuels

Facing the reality

- Biofuels may be sustainable in some instances but destructive in others.
- Biofuel production, in relation to its benefits, will put heavy burden on the poor in most countries in Africa if left unmanaged
- It is politically and socially immoral (insane) to transform all food into fuel for cars, yet many people go to bed hungry.
- By taking food off of the table and use it to produce fuel for cars will make poverty in Africa worse since most people are net food buyers.
- **SUM: While the consequences of biofuels on food supply remain uncertain, BUT they cannot be ignored.**

A look into the future

- Global production of biofuels doubled over the 5 five years and is likely to double again in the next four years (UNDP 2007).
- FAO (2007) predicts that demand for biofuels to grow by 170% in the next three years and to contribute 25% of the world energy needs in the next 15 to 20 years.
- The United States will use 28.4 billion liters of biofuels for transportation by 2012.
- Indonesia to increase its palm oil production from 64,000 sq km to 260,000 sq km by 2025.
- In Southern Africa, about 4m sq km of land to be converted to energy crops such as Jatropha curcas

Food vs. fuel: is a happy ending in sight?

- Agriculture has always adapted to the changing needs of mankind- This should also be possible with biofuels.
- If we slow down the pace, allow SCIENTISTS AND TECHNOLOGISTS to develop technologies that will
  - increase productivity of agriculture per unit of land or labour, to meet growing global demand for both food and biofuels.
  - allow use of non-food feedstock to produce biofuels
- **Then, BIOFUELS need not lead to FOOD CRISIS.**
- **Thus, a "happy ending" is possible only if agriculture can meet both energy & food needs**

A grain of hope

- The biofuels industry is rapidly developing next generation cellulosic technology to meet the growing demand for biofuels from 'low-value' biomass and materials e.g., wood chips, algae and switch grass.

Biotechnology

Hydrolysis/prolysis/esterification

Gasification

A grain of hope

- Increased production and use of non-food or low value feedstocks (e.g., Jatropha) for biofuels

Jatropha Carcus

Sweet sorghum

Sunflower

The "cost" of inaction

- Despite the controversies surrounding the viability of biofuels and its effects on the poor, "inaction" will lead to Africa missing out on the potential benefits that biofuels can offer
  - Missed joint-venture & share-holding opportunities
  - Contract-farming opportunities for producing energy crops
  - Small-scale refineries for energy generation in rural areas
- If Africa takes a proactive, "wait and see" approach to the fast growing industry,
  - more land will be taken away from mainstream agriculture for large-scale, export-oriented production of biofuels
  - Without national participation, profits will be expropriated out
- The effect of rising prices of fossil fuels will heavily impact on oil importing countries in Africa- biofuels offers some relief on the fuel import bill

The way forward

- Need to undertake a proper and systematic, country-specific research to ascertain the viability and economic feasibility of biofuels.
- African governments need to develop appropriate policies and strategy to guide and regulate the growing industry
- Only Malawi, Mozambique, Senegal, South Africa and Zambia- have enacted pro-biofuels policy (UNDP, 2007).
- There is need to define the "rules of the game" to
- Protect rural dwellers from loosing land to foreign investors for growing energy crops
- Equitably distribute profits of biofuels between rural communities & investors

In conclusion

- As we now live in a global village, any significant shift in agriculture landscape in the industrialized world will heavily impact Africa.
- Biofuels era is here to stay! As such, countries and everyone must face reality, and adjust accordingly in order to survive in the fast changing world
  - ***"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change."*** Charles Darwin (1809 – 1882) from "On the Origin of Species" (1859).

Thank you for your attention!

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