



AFRICA FERTILIZER SUMMIT FACTS

Q: Why is there a need to hold a summit about fertilizer use and agriculture in Africa?

A: Africa has a crisis. More than 80 percent of the farmland in sub-Saharan Africa is plagued by severe degradation—losing more nutrients annually than are being replaced. At the same time, farm yield per person in Africa has been declining over the last 40 years. Africa’s crisis in food production and battle with hunger are largely rooted in a “soil health crisis,” as vast swaths of farmland are depleted of nutrients needed to grow crops.

On average, African farmers annually apply one-fifth (less than 10 kilograms) of the minimal amount of nutrients needed to maintain soil health, and fertilizer use is one-tenth the world average of 100 kilograms per hectare. High costs, poor distribution systems and lack of manufacturing capacity are factors preventing farmers from accessing the fertilizers they need to maintain the health of their farmland.

Africa’s leaders will hold a summit to devise concrete strategies to tackle these challenges.

Q: What do you hope to accomplish?

A: The Summit’s ultimate objective is to help relieve the hunger and under nutrition that plagues more than one-third of those living in sub-Saharan Africa, by raising farm production. To do this, Africa’s farmers need access to basic tools of modern agriculture—such as fertilizers—combined with the resources and local knowledge to apply them in ways that work best for their land, and promote stewardship of soil and water resources.

The Summit will identify concrete actions to address these conditions, including measures to lower fertilizer costs (now four-to-six times the world average); train a rural network of retailers; expand financing for private sector importers and distributors of agricultural inputs; and create a favourable environment for the development of fertilizer manufacturing within Africa.

Q: Who is organizing this Summit? Where and when will it be held? Who will attend?

A: The Africa Fertilizer Summit is being convened by the African Union’s New Partnership for Africa’s Development (NEPAD). It will be hosted by the government of the Federal Republic of Nigeria and chaired by His Excellency, Olusegun Obasanjo, President of Nigeria and Chairman of the Implementing Committee of NEPAD. It will be held 9-13 June, 2006, in Abuja, Nigeria.

Summit sponsors include: The Rockefeller Foundation, the Government of Nigeria, the International Fund for Agricultural Development, the Food and Agriculture Organization of the United Nations, The World Bank, the United Kingdom’s Department for International

Development, the United States Agency for International Development, the International Fertilizer Association, Agriterra, Sasakawa Global 2000 and the Arab Fertilizer Association, among others. It will be implemented by the IFDC, an International Center for Soil Fertility and Agricultural Development.

Participants will include African heads of state, ministers, and presidents; international donor organizations; private sector firms; farmers' organizations; senior policy makers; and development institutions.

Q: Why are African farmers not using fertilizer today?

A: A combination of high cost and low availability keep fertilizer out of farmers' hands. African farmers pay two-to-six times the world average price for fertilizers. Poor transport, low trade volumes, and lack of local production capacity contribute to this high cost. For example, it costs more to transport fertilizers from an African seaport to a farm 100 km inland than it does to ship those same fertilizers from North America to Africa.

Furthermore, fertilizer is not readily available. Farmers often must travel considerable distances to get essential farm inputs, such as fertilizer and improved seed. Even then, it may be packaged in quantities or combinations that do not make economic sense for a small farm. A lasting solution to this farming crisis calls for the right policies and robust distribution networks—with adequate credit sources, retail outlets, transportation, and markets, as well as transfer of technology and knowledge.

Q: What role do fertilizers play in the global food supply?

A: The world's population is growing while land available for agricultural production is shrinking. To meet the growing demand for food, farmers have had to increase the efficiency of their farmland, requiring more nutrients. Higher yielding crops and the use of fertilizer have been critical in this regard, tripling worldwide average yields for corn, rice and wheat between 1950 and 2000. It was the basis of the "Green Revolution," which took hold across Asia and Latin America, and is credited with having saved more than one billion lives in Asia alone.

Q: What role do fertilizers play in African agriculture?

A: Fertilizer use in sub-Saharan Africa is less than one-tenth the world average: eight kilograms of nutrients per hectare, compared to a world average of 100 kilograms per hectare. The region's share of world fertilizer consumption is less than 1 percent.

Five countries account for 62.5 percent of this (South Africa, Nigeria, Zimbabwe, Ethiopia and Kenya). But even in these countries, fertilizer is most likely to be used with irrigated cash crops. It is simply beyond the reach of most smallholder farmers across sub-Saharan Africa.

Farming without replacing lost nutrients leads to soil depletion, as nutrients are harvested along with each successive crop. Yields and crop quality decline, and the soil is ultimately left barren. Negligible fertilizer use by smallholder farmers is a major factor in the region's declining farm yield per person, which has exacerbated hunger and under-nutrition on the continent.

Q: Isn't it conventional wisdom that fertilizers can *harm* the environment? If that's so, why are you calling for *increased* fertilizer use?

A: Today, soil depletion combined with population pressures on farmland is itself a major environmental challenge. African farmers often abandon infertile fields to clear forests or plow the savannah. For example, approximately 70 percent of deforestation in Africa is a result of clearing land for cultivation.

At the same time, Africa can and must avoid the challenges of misuse of fertilizer, and this issue will be addressed at several levels during the Summit. Efficient use of fertilizer is synonymous with sound environmental use. For example, with only a bottle capful of fertilizer for each millet plant, farmers in drylands can increase yield by 50 to 100 percent, and at the same time avoid potential environmental harm. The Africa Fertilizer Summit will focus on such practices. Techniques that combine the use of manufactured and organic fertilizers, and that focus on precisely applying minimal amounts of fertilizer, can do double duty—raising farm incomes and rebuilding the soil.

Q: What constitutes environmentally sound use of fertilizer?

A: Environmentally sound use is closely linked to efficient use: providing only the necessary amount of fertilizer to maximize soil health and increase productivity, thereby minimizing loss to the environment.

It is also important to note that efficient and environmentally sound fertilizer helps revitalize depleted soil, thus playing a vital role in conserving the African environment today. Unsustainable farming without fertilizer use is driving the conversion of vast natural areas to farmland, and causing wide-scale erosion across entire landscapes.

Q: What is meant by “fertilizer use efficiency”?

A: Agricultural techniques can increase plant uptake of nutrients, or “fertilizer use efficiency.” The key is providing the right balance of nutrients for a given soil and crop—by rebuilding soil structure with the use of organic nutrients, by good water management, and by the right timing and placement of fertilizers.

Efficient fertilizer use is essential in Africa, where poor farmers can ill afford waste. And we know that for many African farmers, even modest increases in fertilizer—often as little as a bottle capful per plant—can dramatically boost yields.

Q: What exactly are fertilizers?

A: Very simply, fertilizers are nutrients that plants need to grow, produced in a form that they can digest. When applied to the soil, fertilizers replace the nutrients that plants absorb as they grow and that are removed from the soil when the crop is harvested. Proper nourishment helps plants withstand natural stresses, such as harsh weather, drought, and disease. Fertilizers help to grow more abundant, hardy and nutritious crops.

Failure to replace nutrients taken up by crops leads to declining soil fertility, a process called “soil mining.” Soil depleted in this way becomes vulnerable to erosion and other forms of degradation, and can ultimately be totally drained of life.

Q: What are the main ingredients in fertilizers and how do plants use them?

A: Typically, the main ingredients are nitrogen, phosphorous, and potassium. Plants require these and 10 other nutrient elements to grow.

Nitrogen is essential to proteins, DNA, enzymes and plant chlorophyll (which is responsible for photosynthesis), as well as to plant growth and yield. Phosphorus is also essential to photosynthesis, in addition to enhancing rapid growth and helping plants withstand stress. Potassium also helps in photosynthesis, as well as in building proteins and fighting plant disease.

Q: What are the sources of these ingredients?

A: Nitrogen, phosphorus and potassium are found naturally in the ground and the air, and manufactured in digestible forms for plants. Nitrogen is taken from the air, which is 78 percent nitrogen. However, plants cannot use atmospheric oxygen, so it must first be converted to “reactive” forms of nitrogen available to plants.

Phosphate, potassium and most of the secondary and micronutrients are mined from the ground. Phosphorus, the fossil remains of ancient sea creatures, is treated with acids to make it more digestible. Potassium, found in salts left behind after seawater evaporates, needs minimal processing.

Q: What is the difference between mineral and organic fertilizers?

A: Mineral fertilizers are manufactured to provide the correct balance of easily digested plant nutrients. Organic fertilizers come from materials such as crop residues, compost, sewage sludge and livestock manure. Mineral and organic fertilizers complement each other and a combination of both is often the most beneficial for crop and soil.

Organic fertilizers boost the efficiency of mineral fertilizer. They help build soil structure and generate the bacteria and fungi that help crops extract nutrients from the soil. However, they do not provide a balanced or ample enough supply of nutrients to sustain global agricultural production. For example, using enough manure to provide adequate amounts of nitrogen would mean adding up to five times more potassium and phosphorus than a crop needs. Animal manures and plant material contain from 1 percent to 4 percent nitrogen, while fertilizers contain from 40 percent to 46 percent nitrogen on a dry weight basis.

Q: What happens to crop nutrients when they are applied?

A: Applied in the right balance and at the right times, most of the nutrients in fertilizers will be absorbed immediately by plants. The crop will use others later. Crop nutrients from organic sources must first be converted by soil microbes to a form that plants can use. The best agricultural practices enable a crop to absorb most of the fertilizers applied.

Q: If fertilizers were more widely available, and more widely used, would that really make a difference in Africa's struggle to find ways of feeding itself?

A: Absolutely. When able to use mineral and organic fertilizers, farmers in sub-Saharan Africa have dramatically increased yield and improved their livelihoods. For example, maize farmers in Zambia have increased yield six-fold using practices that enhance fertilizer efficiency. Millet farmers in Niger have increased yield by 50 percent to 100 percent through fertilizer "microdosing." This technology holds great promise for farming in drylands frequented by drought and famine.