SUPERFLEX AT THE JOHANNESBURG BIENNIAL

A trio of Danish art students, calling themselves Superflex, complete with logo, T-shirts, corporate registration and office, has built on a connection with East Africa, and on some experiences with crusaders for renewable energy, including this writer, to start a full-scale conversion of all of Africa from reliance on fossil fuels or timber for energy to the home-scale production of methane, or biogas, from dung. The dung would usually be collected from domestic cattle. Any producer of the biogas, using the new technology promoted by and now labelled by Superflex, would rely on from 2 to 15 cattle, or similar livestock. The dung would be collected in a confined area, such as a feedlot, rather than be gathered from the fields. With this dung, as slurried daily into the Superflex digester, any household in Tanzania, and eventually all of (at least) sub-Saharan Africa, could become self-reliant in energy. The fuel produced would have low emissions and no Greenhouse Effect. Art critic Lars Bang Larsen has already written rhapsodically of this project, saying that it is based upon "ecological and humanitarian soundness." It also "poses", he says, a "violent challenge to art's autonomy."

I agree with the latter statement but entirely reject the former. Of course art cannot, like any other profession such as law or medicine, remain autonomous. But nothing in the Superflex project appears to this writer, given his years of research, to have any "ecological and humanitarian soundness." Rather, the Superflex project, if carried out and promoted throughout Africa, or anywhere else in the world except possibly some domesticated-cattle cultures like Denmark, will bring ecological, and therefore social, disaster.

First, as has been documented for over 25 years by the International Union for the Conservation of Nature, most of the continent of Africa, and certainly the tropical areas like Tanzania, are not suited for domesticated-animal regimes. In order to raise between 2 and 15 cattle or equivalent livestock, one must clear away the native forest or savannah, one must sharply reduce the biomass and bioproductivity of the site, one must reduce as well the evapotranspiration cycle which yields rain. The same practices which caused the Sahara to become a desert would be intensified throughout Africa. As the Union of Concerned Scientists writes, one of the three main threats to human survival on Earth is the conversion of tropical ecosystems to agricultural and domestic-animal systems. 50% of all soil degradation results from domestic grazing; the rest results from tropical deforestation and savannah conversion to single-species cropland, which are essential to grazing, and even more essential to the feedlot system proposed for the Superflex biogas system. In Tanzania the dangers are particularly acute. According to Vital Signs, published by the Worldwatch Institute, the rate of

ecosystem conversion, with consequent shrinkage of bioproductivity and evapotranspirative cycles, has been greater in Tanzania than anywhere else in Africa.

Second, while Superflex can claim that "the use of biogas will reduce the release of CO2 to the atmosphere," their system for producing biogas will probably increase it. Their system requires the reduction of vegetation canopy. As the Union of Concern Scientists reports, "Rain forest clearing and other land-use changes also account for roughly one-third of global CO2 emissions." Why? Because, as they explain, "Tropical forest soils are thin and vulnerable to erosion and nutrient loss", so "deforestation destroys the habitats for many plant and animal species". Less species, less biomass, less capacity to fix carbon.

Third, the Superflex biogas digester, despite its efficiency relative to earlier products, will consume too much water. Gas production per day is 3 m3. The water required for production per day is 21 liter per m3 biogas. As I pointed out to a Superflex member, this meant that 60 liters per day would be needed, just to produce biogas plus the compost by-product. That could work in well-watered countries like Denmark. But in Tanzania, as in all but the most rainforested regions of Africa, this will not work. Drought and desertification are No. 1 threats in Africa already. Within 25 years, given current population and consumption trends, according to hydrology-authority Malin Falkenmark ("Global Water Issues Confronting Humanity", republished by the Union of Concerned Scientists), Tanzania will become a chronically water-scarce country, not unlike parts of Ethiopia and South Africa. The hydrological calculations do not support the demand on water to be made daily by the Superflex system. When drought occurs, which farm family will decide to sacrifice its cattle, or stop converting wildlands to pastureland or feed-crop land, or stop using up 60 liters of water a day just to produce fuel.

Fourth, the entire cycle of materials in the physical environment is not used; soil is lost, while production potential is also reduced. Soil flows downhill. Collecting it upland and then shipping it out, whether as food or methane, deprives it of the materials required for its renewal. The dung used to make gas could better be returned to the soil, for uptake into the entire animal-plant circulatory system. Taking it away reduces the activity of animals and plants upon which the animal foraged. Meantime, soil is constantly being washed down streams to the sea, and offshore, or at least in estuaries and coastal marshes, it is accumulating. There, where soil accumulates, as opposed to upland, where cattle forage or feed crops are raised, one can collect soil in the form of plants (or animals) with less concern for depletion. Ideally, the collection of soil can occur in lakes and the ocean, particularly if there are large quantities of algae or fish. Ideally, the collection takes place where materials accumulate naturally, due to gravity: in the sinks. Diverting the dung which cattle produce to replenish the soil only makes

that task of replenishment upland harder, if not impossible. It can even require humans to use artificial means, such as artificial fertilizers, or even the compost generated from the Superflex brand of digester, as opposed to a more efficient and complete method: animal excrement. Yields are lower, especially over the long term; labor is higher; and the basic fact of accumulation in water is ignored.

Fifth, given the traditional structure of African society, a Superflex biogas digester system, if introduced to households, will (a) increase the workload on women more than men, who would rather hunt, (b) sharply increase the competition for grazing land and water, (c) continue the loss of traditional male roles in hunting and multi-species management, causing further social disarray. More bluntly: why are white people from Denmark going down to Africa and telling the people to build barns, plant crops and work every day with manure? Superflex writes: "The idea of relieving strange people is a fundamental part of the history of European humanism." Pressuring people who have cohabited the wild jungle and savannah into building feedlots, cow-shelters, shit-collectors and households, all on a northern European model of the Christian dairy farmer, and all in denial of traditional male roles, is less a form of "relief" than a condemnation, literally, to 'shitwork'. What proud men would spend every day of their lives servicing a water-guzzling biogas digester and meantime maintain the cattle required for it, grow and collect the crops needed to feed those cattle in a place where their dung can be collected, and altogether ignore any memories they or their ancestors may have had of hunting down game?

In South Africa, in Tanzania, in most of Africa, as reported by world-famous scientists like Dr. George Schaller and Dr. Richard Leakey, the sustainable route for development will be some variant of wild hunting-fishing-gathering. To quote the Union of Concerned Scientists: "A joint study by the World Resources Institute, World Conservation Union and United Nations Conservation Program concluded that this could best be done through expanded effrots to preserve habitats, use biological resources in a sustainable manner,... keep species loss to as a small a number as possible..., and study biodiversity by "documenting its composition, distribution, structure and function." Building up a cattle-based economy will not do this job. The same is even true in other parts of the world which are not suited to northern Europe's forms of land use, notably the Great Plains of North America.

The Superflex project, according to Lars Bang Larsen, "is about to conquer Africa." We shall see. One can mobilize all kinds of scientific and social resources, including resource administrators in South Africa and Tanzania, to stop it. And one can mobilize recent art. When Joseph Beuys said he was "Chief of the Hunters," and when Dennis Oppenheim as "shaman" was calling us back to native-American "participation in the land", were they conceiving any role of art in the confinement of animals and collection of

their shit? What is so magical about a future as proposed by the three Danes? How much of the "Futurists' body madness" is there in it? This writer has a simple counter-proposal: follow clues from artists like Smithson and Marinetti and let saltwaters, the deep Ocean, or even giant lakes, be the source of what raw fuels anyone needs. The coastlines of Tanzania and South Africa, inland and offshore, are eminently suited to such work. Leave the jungles and grasslands wild, and find what fuels you need from energy plants (the common scientific recommendation) where they best collect: lakes and seas.

Peter Fend, 20 August 1997