

know there are probably another 80 years of nitrogen trapped in there. Some of it is coming out all the time. There will have to be some replacement every year, but farmers can carry on wearing the soil down because in the lifetime of this particular generation of farmers the nitrogen will not quite run out.

I suppose that is the same kind of moral dilemma and economic dilemma we, as Canadians, have when we look at the whole energy package. We say that this generation will have enough and that only the next generation will have to worry. I think that is indicative of bad judgment and bad planning, and shows up in the political judgments we in this country make. For instance, we are trying to increase exports of wheat, knowing that when we make that judgment we are going to be continuing to exploit the soil. The only way we can continue to do that is to have access to cheap natural gas to manufacture more nitrogen to replace the nitrogen we are pulling from the soil.

At the same time as we are trying to export wheat, which perhaps makes sense because we are processing natural products to some extent, we are processing gas into fertilizer and thereby employing some people. We are employing the product of that manufacturing process back into farming, recycling it again and exporting the wheat, so we are employing people at two or three stages. I could follow through with the argument in that respect, but I have a great deal of difficulty in seeing why we should be exporting natural gas without any processing going on, without providing any jobs, without increasing the technological aspects of our society but just shipping it off as a raw natural resource.

The pricing of a product has much to do with the kind of policy we have. In this country we have been setting a simple, straightforward price, and whoever can afford it will buy. I am pointing out today that that kind of system may leave our ability to produce enough food for this continent and this planet in jeopardy. I say this because the pricing regime we have been falling into, in the last several price proposals which have been put forward by this government and the previous one, is one which is based on the assumption that the price has to be competitive only with those of other countries.

We do have to be competitive with other countries. We realize that when we decide to export grain from our farms, but we also have to be careful of the way we allocate funds that we extract from a product. We are taking more and more just in the form of taxation, and the funds from that taxation are being used more and more to cover costs outside the energy field. They are not used to replace energy, they are not used to find alternatives to energy, they are not used to find technology which will avoid the use of energy. They are simply spent, almost like flaring up the gas well. They are being burned up with no thought for the after effects on the economy, no consideration of the future energy needs which people will have.

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There are many alternate energy sources which farmers can use. Not all of them are applicable in the kind of market

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economy in which we are living. If we are using the philosophy of letting those pay who can, many of these technologies will not be integrated into the farming system in this country and in the whole of North America. We know, for instance, that we can produce a great amount of energy per acre by growing corn, and yet we also know that corn takes more energy input than any other kind of crop on a per acre basis and it is just barely competitive on an input-output basis. Yet, because of the economy of production under the current system, more and more agricultural production is going into corn.

The tendency is toward monoculture of crops such as corn or potatoes in some parts of our country, and in my part of the country crops like wheat. Even though we know that rotating the crops will maintain the nitrogen and humus level, most of our farmers are not following that practice by force of pure and simple economics. As long as there is partial replacement of the nitrogen through alternate forms, such as fertilizers, we will avoid ones which are produced naturally year after year. We know that legume rotation will maintain productivity at about the same level year after year. However, we also know that we will only extract grain crops about half of those years.

What we should be doing about it, Mr. Speaker, is re-evaluating our system of production. Many scientific organizations have been doing this. The Science Council of Canada has done a re-evaluation of production and energy use, and the Science Council of Saskatchewan has been doing this for the past two or three years. They have set out the parameters in which we are working. They know, for instance, that there is no point in expending any more energy, or dollars on energy which will go into machinery manufacture. I think that the economy is probably reacting to that finding of the Science Council of Saskatchewan, if you look at some of the problems that White and Massey-Ferguson are having.

By using energy input-output data you can predict what will happen in the economy down the road in as short a space as two or three years. We could be using the kind of agricultural practice which will capture more of the sun's energy and turn it into food output. We know that in this country we are capturing approximately 1 per cent of the potential energy of the sun with our agricultural methods. We know that in countries like Japan and Denmark they are capturing between 2 per cent and 4 per cent of the potential energy of the sun and converting that into food which can be consumed by man and beast.

Plants and the agricultural industry are a very clear alternative method of converting energy. They are well-known energy converters. Plants have been converting energy for millions of years. Man simply has to learn to use the existing methods to better advantage so that we can reduce our reliance on the kind of energy that has been trapped in rock formations below ground in our country, and we have been developing a technology to use the energy produced by living plants. Some of our physicists and small investors have come out with systems of transferring the sun's rays directly to electricity by introducing water to keep the collector cool. There is a double use of the sun's energy. We not only recover heat but we also