

**SPEECH BY
HIS ROYAL HIGHNESS THE PRINCE OF WALES TO
THE FUTURE FOR FOOD CONFERENCE**

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FINAL – CHECK AGAINST DELIVERY

President de Gioia (*phon:de Joya*), Ladies and Gentlemen. It is a very special pleasure for me to be here again at Georgetown and to speak at this conference. It certainly makes a change from making embarrassing speeches about my eldest son during wedding receptions...!

My one regret today is that I have missed the first panel discussion, chaired by Eric Schlosser, who has done so much, if I may say so, to raise awareness of the key issues in his important film and in his writing. I know that Eric has

outlined why this conference is so vital. The world is gradually waking up to the fact that creating sustainable food systems will become paramount in the future because of the enormous challenges now facing food production.

The Oxford English Dictionary defines “sustainability” as “keeping something going continuously.” And the need to “keep things going” for future generations – in other words, for all of you students, whether here at Georgetown or, through the wonders of modern technology, elsewhere across this vast country – is quite frankly the reason I have made the long journey to Washington.

One or two of you may have noticed that over the past thirty years I have been venturing into extremely dangerous territory by speaking about the future of food. I have all the scars to prove it...! Questioning the conventional world view

is a risky business. And the only reason I have done so is for the sake of your generation and for the integrity of Nature herself. It is your future that concerns me and that of your grandchildren, and theirs too. That is how far we should be looking ahead. I have no intention of being confronted by my grandchildren, demanding to know why on Earth we didn't do something about the many problems that existed, when we knew what was going wrong. The threat of that question, the responsibility of it, is precisely why I have gone on challenging the assumptions of our day. And I would urge you to do the same, because we need to face up to asking whether how we produce our food is actually fit for purpose in the very challenging circumstances of the twenty-first century. We cannot ignore that question any longer.

Very nearly thirty years ago I began by talking about the issue, but I realized in the end I had to go further. I had to put

my concern into action, to demonstrate how else we might do things so that we secure food production for the future, but also, crucially, to take care of the Earth that sustains us.

Because if we don't do that, if we do not work within Nature's system, then Nature will fail to be the durable, continuously sustaining force she has always been. Only by safeguarding Nature's resilience can we hope to have a resilient form of food production and ensure food security in the long term.

This is the challenge facing us. We have to maintain a supply of healthy food at affordable prices when there is mounting pressure on nearly every element affecting the process. In some cases we are pushing Nature's life-support systems so far, they are struggling to cope with what we ask of them. Soils are being depleted, demand for water is growing ever more voracious and the entire system is at the

mercy of an increasingly fluctuating price of oil.

Remember that when we talk about agriculture and food production, we are talking about a complex and interrelated system and it is simply not possible to single out just one objective, like maximising production, without also ensuring that the system which delivers those increased yields meets society's other needs. As Eric has highlighted, these should include the maintenance of public health, the safeguarding of rural employment, the protection of the environment and contributing to overall quality of life.

So I trust that this conference will not shy away from the big questions. Chiefly, how can we create a more sustainable approach to agriculture while recognizing those wider and important social and economic parameters – one that is capable of feeding the world with a global population rapidly

heading for nine billion? And can we do so amid so many competing demands on land, in an increasingly volatile climate and when levels of the planet's biodiversity are under such threat or in serious decline?

As I see it, these pressures mean we haven't much choice in the matter. We are going to have to take some very brave steps. We will have to develop much more sustainable, or durable forms of food production because the way we have done things up to now are no longer as viable as they once appeared to be. The more I talk with people about this issue, the more I realize how vague the general picture remains of the perilous state we are in. So, just to be absolutely clear, I feel I should offer you a quick pen sketch of just some of the evidence that this is so.

Certainly, internationally, food insecurity is a growing

problem. There are also many now who consider that global food systems are well on the way to being in crisis. Yield increases for staple food crops are declining. They have dropped from three per cent in the 1960's to one per cent today – and that is really worrying because, for the first time, that rate is less than the rate of population growth. And all of this, of course, has to be set against the ravages caused by climate change. Already yields are suffering in Africa and India where crops are failing to cope with ever-increasing temperatures and fluctuating rainfall. We all remember the failure of last year's wheat harvest in Russia and droughts in China. They have caused the cost of food to rocket and, with it, inflation around the world, stoking social discontent in many countries, notably in the Middle East. It is a situation I fear will only become more volatile as we suffer yet more natural disasters...

Set against these threats to yields is the ever-growing

demand for food. The United Nations Food and Agriculture Organisation estimates that the demand will rise by seventy per cent between now and 2050. The curve is quite astonishing. The world somehow has to find the means of feeding a staggering 219,000 new mouths every day. That's about 450 since I started talking! What is more, with incomes rising in places like China and India, there will also be more people wealthy enough to consume more, so the demand for meat and dairy products may well increase yet further. And all that extra livestock will compete for feed more and more with an energy sector that has massively expanded its demand for biofuels. Here in the U.S., I am told, four out of every ten bushels of corn are now grown to fuel motor vehicles.

This is the context we find ourselves in and it is set against the backdrop of a system heavily dependent upon fossil fuels and other forms of diminishing natural capital –

mineral fertilizers and so on. Most forms of industrialized agriculture now have an umbilical dependency on oil, natural gas and other non-renewable resources. One study I have read estimates that a person today on a typical Western diet is, in effect, consuming nearly a U.S. gallon of diesel every day!

And when you consider that in the past decade the cost of artificial nitrogen fertilizers has gone up fourfold and the cost of potash three times, you start to see how uncomfortable the future could become if we do not wean ourselves off our dependency. And that's not even counting the impact of higher fuel prices on the other costs of production – transport and processing – all of which are passed on to the consumer. It is indeed a vicious circle.

Then add the supply of land into the equation – where do we grow all of the extra plants or graze all that extra stock when urban expansion is such a pressure? Here in the United States I am told that one acre is lost to development every

minute of every day – which means that since 1982 an area the size of Indiana has been built over – though that is small fry compared with what is happening in places like India where, somehow, they have to find a way of housing another three hundred million people in the next thirty years. But on top of this is the very real problem of soil erosion.

Again, in the U.S., soil is being washed away ten times faster than the Earth can replenish it, and it is happening forty times faster in China and India. Twenty-two thousand square miles of arable land is turning into desert every year and, all told, it appears a quarter of the world's farmland, two billion acres, is degraded.

Given these pressures, it seems likely we will have to grow plants in more difficult terrain. But the only sustainable way to do that will be by increasing the long term fertility of

the soil, because, as I say, achieving increased production using imported, non-renewable inputs is simply not sustainable.

There are many other pressures on the way we produce our food, but I just need to highlight one more, if I may, before I move on to the possible solutions, because it is so important. It is that magical substance we have taken for granted for so long – water.

In a country like the United States a fifth of all your grain production is dependent upon irrigation. For every pound of beef produced in the industrial system, it takes two thousand gallons of water. That is a lot of water and there is plenty of evidence that the Earth cannot keep up with the demand. The Ogallala Aquifer on the Great Plains, for instance, is depleting by 1.3 trillion gallons faster than rainfall can replenish it. And

when you consider that of all the water in the world, only five per cent of it is fresh and a quarter of that sits in Lake Baikal in Siberia, there is not a lot left. Of the remaining four per cent, nearly three quarters of it is used in agriculture, but thirty per cent of that water is wasted. If you set that figure against future predictions, then the picture gets even worse. By 2030 it is estimated that the world's farmers will need forty-five per cent more water than today. And yet already, because of irrigation, many of the world's largest rivers no longer reach the sea for part of the year – including, I am afraid, the Colorado and Rio Grande.

Forgive me for labouring these points, but the impact of all of this has already been immense. Over a billion people – one seventh of the world's population – are hungry and another billion suffer from what is called “hidden hunger,” which is the lack of essential vitamins and nutrients in their

diets. And on the reverse side of the coin, let us not forget the other tragic fact – that over a billion people in the world are now considered overweight or obese. It is an increasingly insane picture. In one way or another, half the world finds itself on the wrong side of the food equation.

You can see, I hope, that in a global ecosystem that is, to say the least, under stress, our apparently unbridled demands for energy, ~~land and water~~ puts overwhelming pressure on our food systems. I am not alone in thinking that the current model is simply not durable in the long term. It is not “keeping everything going continuously” and it is, therefore, not sustainable.

So what is a “sustainable food production” system? We should be very clear about it, or else we will end up with the same system that we have now, but dipped in “green wash.”

For me, it has to be a form of agriculture that does not exceed the carrying capacity of its local ecosystem and which recognizes that the soil is the planet's most vital renewable resource. Top soil is the cornerstone of the prosperity of nations. It acts as a buffer against drought and as a carbon sink and it is the primary source of the health of all animals, plants and people. If we degrade it, as we are doing, then Nature's capital will lose its innate resilience and it won't be very long, believe you me, before our human economic capital and economic systems also begin to lose their resilience.

Let's, then, try and look for a moment at what very probably is not a genuinely sustainable form of agriculture – for the long term. In my own view it is surely not dependent upon the use of chemical pesticides, fungicides and insecticides; nor, for that matter, upon artificial fertilizers and

growth-promoters? You would have perhaps thought it unlikely to create vast monocultures and to treat animals like machines by using industrial rearing systems. Nor would you expect it to drink the Earth dry, deplete the soil, clog streams with nutrient-rich run-off and create enormous dead zones in the oceans. You would also think, wouldn't you, that it might not lead to the destruction of whole cultures or the removal of many of the remaining small farmers around the world? Nor, presumably, would it destroy biodiversity at the same time as cultural and social diversity.

On the contrary, genuinely sustainable farming maintains the resilience of the entire ecosystem by encouraging a rich level of biodiversity in the soil, in its water supply and in the wildlife – the birds, insects and bees that maintain the health of the whole system. Sustainable farming also recognizes the importance to the soil of planting trees; of protecting and

enhancing water-catchment systems; of mitigating, rather than adding to, climate change. To do this it must be a mixed approach. One where animal waste is recycled and organic waste is composted to build the soil's fertility. One where antibiotics are only used on animals to treat illnesses, not deployed in prophylactic doses to prevent them; and where those animals are fed on grass-based regimes as Nature intended.

You may think this an idealized definition – that it isn't possible in “the real world” – but if you consider this the gold standard, then for food production to become more “sustainable” it has to reduce the use of those substances that are dangerous and harmful not only to human health, but also to the health of those natural systems, such as the oceans, forests and wetlands, that provide us with the services essential to life on this planet – but which we rashly take for granted. At the

same time, it has to minimize the use of non-renewable external inputs. Fertilizers that do not come from renewable sources do not enable a sustainable approach which, ultimately, comes down to giving back to Nature as much as it takes out and recognizing that there are necessary limits to what the Earth can do. Equally, it includes the need for producers to receive a reasonable price for their labours above the price of production. And that, ladies and gentlemen, leads me to the nub of what I would like you to consider.

Having myself tried to farm as sustainably as possible for some twenty-six years in England, I certainly know of plenty of current evidence that adopting an approach which mirrors the miraculous ingenuity of Nature can produce surprisingly high yields of a wide range of vegetables, arable crops, beef, lamb and milk. And yet we are told ceaselessly that sustainable or organic agriculture cannot feed the world. I

find this claim very hard to understand. Especially when you consider the findings of an impeccably well-researched International Assessment of Agricultural Knowledge, Science and Technology for Development, conducted in 2008 by the U.N. I am very pleased, by the way, to see that the co-chair of that report, Professor Hans Herren, will be taking part in the International Panel discussion towards the end of the conference. The report drew on evidence from more than 400 scientists worldwide and concluded that small-scale, family-based farming systems, adopting so-called agro-ecological approaches, were among the most productive systems in developing countries. This was a major study and a very explicit statement. And yet, for some strange reason, the conclusions of this exhaustive report seem to have vanished without trace.

This is the heart of the problem, it seems to me – why it

is that an industrialized system, deeply dependent on fossil fuels and chemical treatments, is promoted as viable, while a much less damaging one is rubbished and condemned as unfit for purpose. The reasons lie in the anomalies that exist behind the scenes.

I would certainly urge you, first, to look at the slack in the system. Under the current, inherently unsustainable system, in the developed world we actually throw away approximately forty per cent of the food we have bought.

Food is now much cheaper than it was and one of the unexpected consequences of this is, perhaps, that we do not value it as once we did. I cannot help feeling some of this problem could be avoided with better food education. You only have to consider the progress your First Lady, Mrs Obama, has achieved lately by launching her “Let’s Move”

campaign – a wonderful initiative, if I may say so. With manufacturers making their “Healthy Weight Commitment” and pledging to cut 1.5 trillion calories a year from their products; with Walmart promising to sell products with less sugar, salt and trans-fats, and to reduce their prices on healthy items like fresh fruits and vegetables; and with the First Lady’s big drive to improve healthy eating in schools and the excellent thought of urging doctors to write out prescriptions for exercise; these are marvellous ideas that I am sure will make a major difference.

Alas, in developing countries approximately forty per cent of food is lost between farm and market. Could that be remedied too, this time by better on-farm storage? And we should also remember that many, if not most, of the farmers in the developing world are achieving a fraction of the yields they might do if the soil was nurtured more with an eye to

organic matter content and improved water management.

However, the really big issue we need to consider is how conventional, agri-industrial techniques are able to achieve the success they do, and how we measure that success. And here I come to the aspect of food production that troubles me most.

The well-known commentator in this country on food matters, Michael Pollan, pointed out recently that, so far, the combined market for local and organic food, both in the U.S. and Europe, has only reached around two or three per cent of total sales. And the reason, he says, is quite simple. It is the difficulty in making sustainable farming more profitable for producers and sustainable food more affordable for consumers. With so much growing concern about this, my International Sustainability Unit carried out a study into why sustainable food production systems struggle to make a profit,

and how it is that intensively produced food costs less. The answer to that last question may seem obvious, but my I.S.U. study reveals a less apparent reason.

It looked at five case studies and discovered two things: firstly, that the system of farm subsidies is geared in such a way that it favours overwhelmingly those kinds of agricultural techniques that are responsible for the many problems I have just outlined. And secondly, that the cost of that damage is not factored into the price of food production. Consider, for example, what happens when pesticides get into the water supply. At the moment, the water has to be cleaned up at enormous cost to consumer water bills; the primary polluter is not charged. Or take the emissions from the manufacture and application of nitrogen fertilizer, which are potent greenhouse gases. They, too, are not costed at source into the equation.

This has led to a situation where farmers are better off using intensive methods and where consumers who would prefer to buy sustainably produced food are unable to do so because of the price. There are many producers and consumers who want to do the right thing but, as things stand, “doing the right thing” is penalised. And so this raises an admittedly difficult question – has the time arrived when a long, hard look is needed at the way public subsidies are generally geared? And should the recalibration of that gearing be considered so that it helps healthier approaches and “techniques”? Could there be benefits if public finance were redirected so that subsidies are linked specifically to farming practices that are more sustainable, less polluting and of wide benefit to the public interest, rather than what many environmental experts have called the curiously “perverse” economic incentive system that too frequently directs food production?

The point, surely, is to achieve a situation where the production of healthier food is rewarded and becomes more affordable and that the Earth's capital is not so eroded.

Nobody wants food prices to go up, but if it is the case that the present low price of intensively produced food in developed countries is actually an illusion, only made possible by transferring the costs of cleaning up pollution or dealing with human health problems onto other agencies, then could correcting these anomalies result in a more beneficial arena where nobody is actually worse off in net terms? It would simply be a more honest form of accounting that may make it more desirable for producers to operate more sustainably – particularly if subsidies were redirected to benefit sustainable systems of production. It is a question worth considering, and I only ask it because my concern is simply that we seek to produce the healthiest food possible from the healthiest

environment possible – for the long term – and to ensure that it is affordable for ordinary consumers.

There are, after all, already precedents for these kinds of measures, particularly, for instance, in the way that governments around the world have stimulated the growth of the renewable energy market by the provision of market mechanisms and feed-in tariffs. Could what has been done for energy production be applied to food? Is this worth considering? After all, it could have a very powerful, transformative effect on the market for sustainably produced food, with benefits all round.

Certainly, the U.N.'s Environment Programme inspires hope when it estimates that the “greening” of agriculture and fisheries would increase economic value per year by eleven per cent by 2050. The hugely overstretched stocks of the

North East Atlantic Blue Fish Tuna is a case in point, where it is estimated that a transition to sustainable fisheries management could generate a profit of more than 500 million dollars every year, as compared to the current figure of seventy million dollars – and that is after having received 120 million dollars in subsidies. It is also worth bearing in mind that these sorts of policies which encourage more diversity, in terms of landscape, community and products, often generate all sorts of other positive results too – in tourism, forestry and industry.

This all depends upon us deepening our understanding of the relationship between food, energy, water and economic security, and then creating policies which reward producers who base their farming systems on these principles. Simply because, if we do not consider the whole picture and take steps with the health of the whole system in mind, not only

will we suffer from rising food prices, we will also see the overall resilience of our economies and, in some instances, our ecological and social systems too, becoming dangerously unstable.

If we do take such important steps, it seems to me that we would also have to question whether it is responsible in the long-term to have most of our food coming from highly centralised processing and distribution systems. Raw materials are often sourced many thousands of miles away from where we live; meat is processed in vast factories and then transported great distances before being sold. In light of the kinds of events we have been witnessing more frequently of late, such as the horrific floods in Pakistan last year and in Australia a few months ago, it is very easy to imagine that with systems concentrated in such intense, large-scale ways, these events could quickly escalate into a global food crisis. We have to consider how we achieve food security in a world

where commodity food prices will inevitably rise. So, could one way be to put more emphasis on re-localising the production and distribution of key staple foods? Wouldn't that create the sort of buffer we will need if we are to face increasingly volatile and unpredictable world market prices?

And remember the point I made earlier. The fact that food production is part of a wider socio-economic landscape. We have to recognize that social and economic stability is built upon valuing and supporting local communities and their traditions. Smallholder agriculture therefore has a pivotal role. Imagine if there was a global food shortage; if it became much harder to import food in today's quantities, where do countries turn to for their staple foods? Is there not more resilience in a system where the necessary staple foods are produced locally, so that if there are shocks to the system, there won't be panic? And what is more, not only can it be

much more productive than it currently is, strengthening small farm production could be a major force in preserving the traditional knowledge and biodiversity that we lose at our peril.

So might it be wise, given the rather difficult situation we appear to be in, that if we do look at re-gearing the way subsidies work, we include policies that focus funding on strengthening economic and environmental diversity? This diversity is at the root of building resilient economies that have the adaptive capacity to deal with the increasingly severe and frequent shocks that affect us all.

Ladies and gentlemen, I am a historian, not an economist, but what I am hinting at here is that it is surely time to grasp one of the biggest nettles of all and re-assess what has become a fundamental aspect of our entire economic

model. As far as I can see, responding to the problems we have with a “business as usual” approach towards the way in which we measure G.D.P. offers us only short-term relief. It does not promise a long-term cure. Why? Because we cannot possibly maintain the approach in the long-term if we continue to consume our planet as rapaciously as we are doing. Capitalism depends upon capital, but our capital ultimately depends upon the health of Nature’s capital. Whether we like it or not, the two are in fact inseparable.

There are alternative ways to growing our food which, if used with new technology – things like precision irrigation, for instance – would go a very long way to resolving some of the problems we face. If they are underpinned by smarter financial ways of supporting them, they could strengthen the resilience of our agriculture, marine and energy systems. We could ensure a means of supply that is capable of withstanding

the sorts of sudden fluctuations on international markets which are bound to come our way, as the price of oil goes up and the impact of our accelerating disruption of entire natural systems becomes greater.

In essence what I am suggesting here is something very simple. We need to include in the bottom line the true costs of food production – the true financial costs and the true costs to the Earth. It is what I suppose you could call “Accounting for Sustainability,” a name I gave to a project I set up six years ago, initially to encourage businesses to expand their accounting process so that it incorporates the interconnected impact of financial, environmental and social elements on their long-term performance. What if Accounting for Sustainability was applied to the agricultural sector? This was certainly the implicit suggestion in a recent and very important study by the U.N. The Economics of Ecosystems

and Biodiversity, or T.E.E.B., assessed the multi-trillion dollar importance to the world's economy of the natural world and concluded that the present system of national accounts needs to be upgraded rapidly so they include the health of natural capital, and thereby accurately reflect how the services offered by natural ecosystems are performing – let alone are paid for. Incidentally, to create a genuine market for such services – in the same way as a carbon market has been created – could conceivably make a substantial contribution to reducing poverty in the developing world.

This is very important. If we hope to redress the market failure that will otherwise blight the lives of future generations, we have to see that there is a direct relationship between the resilience of the planet's ecosystems and the resilience of our national economies.

Ladies and gentlemen, I hope you have begun to see my point – and that the other universities are still with us!

Essentially, we have to do more today to avert the catastrophes of tomorrow and we can only do that by re-framing the way we approach the economic problems that confront us. We have to put Nature back at the heart of the equation. If we are to make our agricultural and marine systems (and therefore our economies) resilient in the long term, then we have to design policies in every sector that bring the true costs of environmental destruction and the depletion of natural capital to the fore and support an ecosystem based approach. And we have to nurture and support the communities of smallholders and family farmers.

I trust that these thoughts will help to fire your debates and focus your thoughts for the rest of the conference. Who knows, perhaps at the end of it, we might be able to herald a

new “Washington Consensus?” Like the previous version which has so dominated economic thinking around the world, it could be a consensus that acknowledges the need for markets and the role of the private sector, but which also embraces the urgent need for a rounded approach – one that recognizes the real opportunities and trade-offs needed to build a food system that enhances and ensures the maintenance of social, economic and environmental capital.

The new food movement could be at the heart of this Consensus, acting as an agent for truly transformational change; not just by addressing the challenges of making our food systems more sustainable and secure but also because, as far as I am concerned, agriculture – not agri-industry – holds the key to the improvement of public health, the expansion of rural employment, the enrichment of education and enhancement of quality of life.

Critically, such a new Washington Consensus might embrace the willingness of all aspects of society – the public, private and N.G.O. sectors, large corporations and small organisations – to work together to build an economic model built upon resilience and diversity, which are the two great characteristics of your nation. Such a partnership is vital; indeed, it has never been needed more and I am tremendously inspired by recent initiatives here in the United States. You cannot help but feel hopeful when such huge corporations like Walmart back local sourcing of food and decide to stock their shelves with sustainable or organic produce. Industry is clearly listening. Everyone has to work together and we all have to recognize the principle the Mahatma Gandhi observed so incisively when he said that “we may utilize the gifts of Nature just as we choose, but in her books the debts are always equal to the

credits.”

It is, I feel, our apparent reluctance to recognize the interrelated nature of the problems and therefore the solutions, that lies at the heart of our predicament and certainly on our ability to determine the future of food. How we deal with this systemic failure in our thinking will define us as a civilisation and determine our survival. Ladies and gentlemen, let me end by reminding you of the words of one of your own founding fathers and visionaries. It was George Washington who entreated your forebears to “Raise a standard to which the wise and honest can repair; the rest is in the hands of God” – and, indeed, as so often in the past, in the hands of your great country, the United States of America.