ADDRESS BY
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"SAVE THE SOIL TO SAVE THE PLANET"

BEJING

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SLIDE 1 – Save the Soil, Save the Planet

1. Good afternoon distinguished guests, Ladies and Gentlemen. It is a pleasure to be back in China as Patron of the ADC. I have had the honour of meeting former President Hu Jintao both in Australia and China when I was Governor-General and in November last year I had the privilege of meeting President Xi Jinping, during a visit by the Club of Madrid, sponsored by my friend and supporter, Dr Chau Chak Wing.

SLIDE 2 - To feed the people we must save our soil and we must save our soil to save the planet

2. Today I wish to address my remarks on the critical issue of food security, and the vital importance of healthy soil and healthy landscapes needed to produce nutritious food, for an increasing global population estimated to reach 9/10 billion by 2050, up from 7 billion today.

EXPLAIN – Cup of Soil

3. A number of world leaders have understood the importance of a healthy soil and adequate water very well.

READ

SLIDE 3 – Franklin Roosevelt – "The history of every nation is eventually written in the way in which it cares for its soil" and "the nation that destroys its soil, destroys itself"

4. Jim Yong Kim, the President of the World Bank, heralded a warning for us when he spoke about the possibility of future food and water wars where he said:

SLIDE 4 - Statement by Jim Yong Kim - "**fights over water and food are going to be the most significant direct impacts of climate change in the next five to 10 years**"

5. The UN Secretary General, His Excellency Antonio Guterres made these comments noting that soil and water will increasingly underpin global social stability and security.

SLIDE 5 –"Food security is under threat around the world ….With food insecurity, we must add economic insecurity as scarcities of staple crops cause price surges.

One-third of the world's population already lives in countries experiencing water stress …. it threatens to become a catalyst for conflict."

SLIDE 6 – Global Context

6. So what is the global situation in respect to our soils?

7. We are losing soil at the rate of around 1% per year to erosion, aridification, desertification, urbanisation and so on. According to the UN Food and Agriculture Organisation, for every meal we eat, we lose 5 kg of soil, and that globally, the rate of soil loss far outpaces the natural cycle of soil formation. We are losing essential soil carbon, acquifers are being depleted and rivers polluted. We also have the impact of climate change on ice melts, longer, hotter droughts and more severe flooding.

8. Nugatory agricultural practices have impacted the landscape since man first changed from being a nomadic hunter/gatherer to a fixed location farmer and this impact has increased exponentially over the last few hundred years.

SLIDE 7 – Middle East Region

9. A prime example of this is in the Middle East in the region known as the Fertile Crescent. Farming began there some 11,500 years ago. Today however, deforestation, damming and large scale irrigation has caused widespread soil erosion and salinisation which has turned productive fields into barren saltpans and desert. Aquifers are running dry and what was productive top soil has eroded away. War has not helped either in Syria, Iraq, Afghanistan and sub Sahara Africa. This has sobering implications for present and future management of landscapes worldwide.

Slide 8 – Blank Soil Regeneration

10. A key indicator of a healthy soil is its carbon content. Substantial global agricultural areas have decreasing soil organic carbon levels, which impacts on a soil's capacity to hold water within the soil.

EXPLAIN 8:1 RATIO

11. A critical issue for agricultural land managers relates to water availability. Water supplies for agriculture and for drinking are decreasing in many areas, with aquifers in India, China, Sub-Saharan Africa, the Middle East and even California, already depleted or at much reduced levels. Also for many areas around the globe, ground water supplies are at very low levels as well. Further, many of our major global rivers are polluted or dammed with the effect of depriving countries, towns or cities downstream of adequate supplies of water.

12. Climate change will have an increasingly serious impact on agricultural production. We should also note that soil contains twice as much carbon as the atmosphere

and should be better used to draw down more carbon dioxide from the air via photosynthesis.

SLIDE 9 – World Soil Charter – 9 actions for governments

13. But good things are happening! In June 2015, member nations of the United Nations Food and Agricultural Organisation (FAO), including Australia and China, endorsed the World Soil Charter which sets out nine actions for governments. These nine actions include to "**Promote sustainable soil management that is relevant to the range of soils present and the needs of the country**" and "**Incorporate the principles and practices of sustainable soil management into policy guidelines and legislation at all levels of government ideally leading to the development of a National Soil Policy"**. I will speak about a soil policy shortly. It is pleasing to see that globally we are making some headway in this area.

SLIDE 10 – Australia

14. So what is the situation in my own country Australia, where the agricultural landscape comprises 60% of the continent – 4.2 million square kilometres? Whilst we have many good farmers backed up by good science who work to produce clean, green and healthy food, we still have land management problems including;

- soil carbon loss – down from around 3% to 1%;
- water evaporation, particularly in the more arid areas where there is a lack of vegetation coverage. Some 50 per cent of our agricultural rainfall evaporates, because it cannot get into the soil; a terrible and unnecessary waste;
- over reliance on chemicals, pesticides and insecticides leading to a loss of soil microbes, and although this practice has decreased in some areas, there remains much still to be done;
- loss of nutrients such as phosphorous and magnesium as a result of some out dated agricultural practices;
- salinity is still a major problem in parts of the country although many areas have overcome this with appropriate planting of perennial grasses, shrubs and trees;
- erosion and excision of one million kilometres of our streams and rivers through rapid run off from deforested slopes is affecting water flows, irrigation

systems, fish life and other wildlife; and

- feral animals – wild cats, camels, pigs, cane toads and fire ants.

15. I would think that China has many of the same problems.

SLIDE 11 – Blank

16. But – and it is a very important 'but' - we do have the answers, and I would like to outline my thoughts on a three pronged strategy which I believe will give Australia a positive result in the regeneration of our agricultural landscape, and the methodologies which may well be extrapolated to parts of China.

SLIDE 12 Three Pronged Strategy

17. This three pronged strategy involves;

    First. **The global imperative,** about which I have just spoken and whilst of serious concern, provides opportunities for China and Australia to share our success stories with the world through the export of our knowledge and expertise.

    EXPLAIN – Export of food / knowledge

    Second. The second prong of the strategy is what I call **'fixing farm soils**'. This involves bringing together farmers who have adopted regenerative soil, water and plant management practices. These farmers are restoring the health of their soils, to achieve economic productivity, environmental and social benefits.

    Third. The third prong is the development of a national policy with the aim of "restoring and maintaining the health of the Australian agricultural landscape".

18. Let me explain the second and third elements of the strategy in a little more detail.

19. "Fixing farm soils" anywhere requires an understanding of the components of a healthy soil. These include firstly, the microbial, fungal and mineral content of the soil itself, second, water (the hydrology), and thirdly, the plants. <u>These three must be managed as an integrated whole</u>. If done properly, we can fix any farm soil. What is needed are good measurement systems, backed by good science conducted long term. We should note that failure to properly manage any one of the three, inevitably leads to the failure of the other two. EXPLAIN

SLIDE 13 – Soils for Life

20. Soils For Life, of which I am founding Chairman, is a not-for-profit organisation acting as a catalyst for urgent change to restore degenerated soil:

    - to safeguard sustainable food production and water availability for successive generations in the face of a changing climate; and

    - to ensure improved social, economic and environmental outcomes for farmers, the nation and the planet.

21. We now have 30 leading practice agricultural field study sites across the country and a proven mentoring program in western New South Wales. We will expand that number to 100 sites over the next two to three years.

22. A key objective of the Soils For Life program is to establish a long-term soil, water, agricultural research base where we can consistently measure performance outcomes and make this information readily available to other farmers, the soil science community, governments and the public and private sectors. An important component of this program involves farmer to farmer mentoring and recognition of the important contribution of farmers to global well-being.

23. Let me give you two examples of innovative leading practice farmers in Australia, who are already building, or who have built, resilience into their land and are now reaping the benefits, including trebling or more of stocking levels, improved crop health and yields, not to mention an improvement in the farmers' work and life balances.

SLIDE 14 – Haggerty's semi-arid – WA

24. This farmer has changed semi-arid (100 to 300 mm rainfall) non-productive sand into good soil which is producing highly nutritious grain, high quality wool fibre and excellent lamb.

EXPLAIN – the Haggerty slide

SLIDE 15 – Beetaloo Northern Territory

25. The next example is Beetaloo Station in the Northern Territory. This enterprise has quadrupled their grazing herds using sophisticated cell grazing management techniques.

EXPLAIN – Beetaloo slide

SLIDE 16 – BLANK

26. All our case studies have a common theme – successful integrating of the management of the soil, water and plant assets. Please note that we are now linking closely with the Chinese Academy of Agricultural Science on agricultural landscape regeneration matters.

SLIDE 17 – A Common National Soil Policy

27. This leads to the third component of my strategy which I call '**fixing the policy'**.

28. To support the regeneration of our agricultural landscapes, we need a nationally agreed aim or objective "to restore and maintain the health of the agricultural landscape by integrating the management of our soil, water and vegetation assets". This will achieve a sustainable quadruple bottom line result to benefit the landholder, the country and indeed the global community.

SLIDE 18 – National Natural Strategic Assets – Soil, Water, Vegetation

29. Having defined our policy objective, I suggest we need to have acceptance with all governments, that soil, water and vegetation need to be declared key national, natural strategic assets to be managed accordingly and in an integrated way. Developing this policy needs the input of all key ministries of government, including agriculture, environment, mining, health, education, indigenous, trade, regional development, defence, the private sector and importantly, the community.

EXPLAIN – health, education, defence

SLIDE 19 – Policy Components – recognise farmers, reconnect urban and rural communities, stocktake our knowledge, regulation overburden

30. As part of this policy, there must be public acknowledgment for our farmers to be recognised and rewarded for their stewardship of the landscape as well as being paid a fair price for their products.

31. I believe it is vital for our future as a planet, to reconnect urban and rural dwellers, so that those living in towns and cities understand where their food comes from, the importance of healthy soil, water and plants, and the contribution made by farmers to the environment over all. To do this effectively, Soils For Life is working with Australian governments to establish a garden in every primary and junior secondary school across the country with an integrated syllabus, good resources and education for teachers. This will ensure that our children learn about soil and its vital components, the importance of water function in the soil and the need for

diverse vegetation coverage of the land.

32. Such a policy would include a stocktake of our soil/water/agricultural knowledge base, establish the consequent scientific shortfalls and then refocus all research priorities accordingly: for example, broad acre soil carbon measurement, reducing inorganic nitrogen leaching, reduction of evaporation/runoff, etc.

33. And finally, with a national soil policy there is an imperative to look at the regulations governing the management of our landscapes to ensure that good work is not inhibited by often **contradictory regulatory overburden.**

SLIDE 20 – Summary

34. Let me summarise my remarks by suggesting a call to action for the global community to:

    a. Agree a national objective to 'restore and maintain the health of all agricultural landscapes'.

    b. Agree that the three components of a healthy landscape; namely its soil, water and plants, be declared as key national or even global, natural strategic assets, to be managed accordingly and in an integrated way.

    c. Acknowledge that it is the farmers who are looking after and caring for a very large area of our arable land globally on behalf of city dwellers. Those farmers need to be supported, rewarded and recognised as the primary carers of the planet's agricultural landscape.

    d. Where applicable, reconnect urban dwellers with their rural roots. A possible solution is by educating the young through the establishment of a vegetable garden in every primary and junior high school in our countries with a coordinated syllabus and appropriate teacher resources.

    e. Stocktake our current national knowledge base on soil, water, plants and food nutrition, with a view to sharing that knowledge and defining key gaps, eg soil carbon measurement.

    f. Establish 100 leading practice farming case studies as we are doing in Australia, to provide the long term scientific backup underlying successful farming practices.

    g. Develop a communication mechanism to ensure these results, solutions and practices can be quickly and easily disseminated for adoption by all

agricultural communities.

h. Consider the establishment of an independent national advocate in all our countries to share information, promote the importance of sustainable, regenerative agricultural practises to ensure we have healthy soil for future generations.

35. To conclude. A healthy soil is vital for sustainable life and it impacts all society. Indeed if you eat, you should be involved! I've provided some thoughts for you on how the planet will benefit, through coordinated leadership by fixing farm soils and policy.

36. In a nutshell; to save the planet, we must save the soil.

SLIDE 21 - To save the planet, save the soil

37. Thank you.