

Management of desertified area

against dust and sand storm

National Institute of Ecology
Dept. of Ecology and Evolution
Gilsang Jeong, PhD

Thank you for organizing the meeting



Impressive efforts



Success for people and environment

III. RESULTS

Combating desertification improves livelihood
- turning sand into bread is no longer a legend

1 Ecological Improvement: Greening the Degraded Land

Driving along northern China, you will find green instead of yellow in many places. Those previously barren hills have now become oases. The land being



The graph shows two data series: 'floating dust' (black line with circles) and 'raising dust' (red line with squares). The y-axis is labeled 'The days' and ranges from 8 to 16. The x-axis represents time. The 'floating dust' series shows a peak of approximately 13.5 days, while the 'raising dust' series shows a peak of approximately 16 days.

| Time | floating dust (The days) | raising dust (The days) |
|------|--------------------------|-------------------------|
| 1 | 9.5 | 10.0 |
| 2 | 9.5 | 10.0 |
| 3 | 13.5 | 16.0 |
| 4 | 9.5 | 10.0 |
| 5 | 13.5 | 10.0 |

2 Economic Benefits

Combating desertification improves livelihood
- turning sand into bread is no longer a legend

Is investment in desertification combating a black hole?
No, absolutely not. Connecting ecological improvement with industrial
win-win solution in green economy.
China's desertification combating program has achieved remarkable
the same time, increased green
and ind:

Historical and annual event



Major health concern

Summary of Joint Research on Dust and Sand storms

Tripartite Environment Ministers Meeting (TEMM)

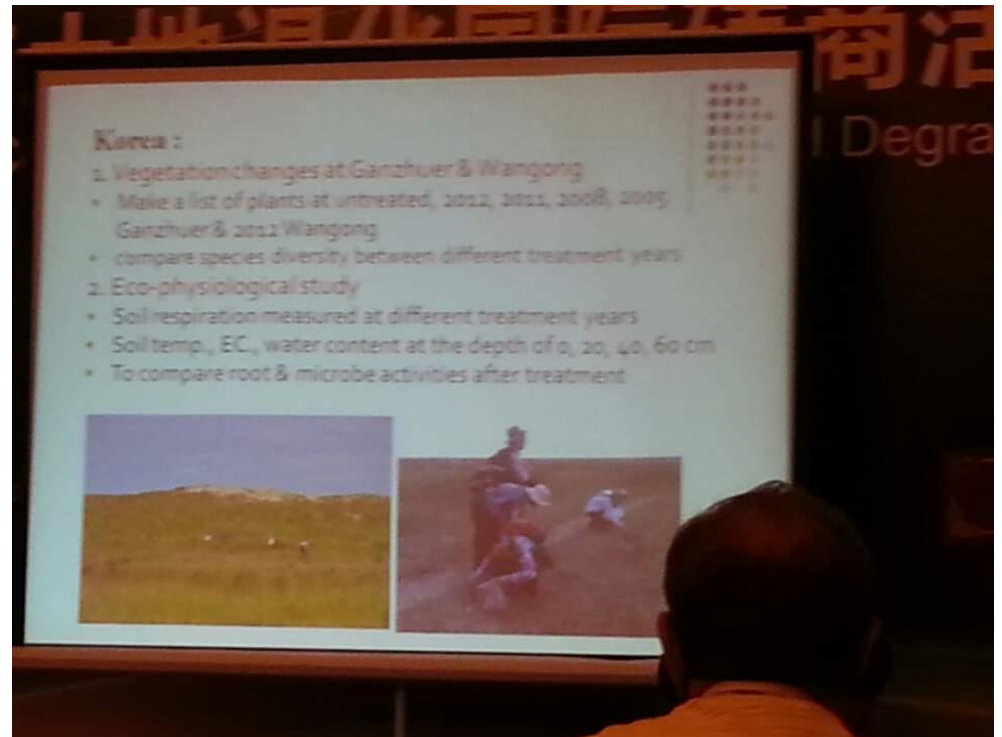
Steering Committee Meeting (SCM)

Steering Committee Working Group II (WG II)

| | | | |
|-----|---|--|---|
| '09 | <p>11th('09.6)</p> <ul style="list-style-type: none"> - Selection of 'Dust and sandstorm' as 10-point priority cooperation area | | |
| '10 | | | |
| '11 | <p>13th('11.4, Pusan)</p> <ul style="list-style-type: none"> - Demand tripartite joint survey based on increasing financial support | <p>5th('11.1)</p> <p>Request establishment of Mid-term action plan</p> | |
| '12 | | <p>6th('12.2)</p> <p>Agreement of tripartite joint research plan</p> | <p>5th('12.12) WG II meeting</p> <ul style="list-style-type: none"> - Agreement of joint field survey in Hurunbeier (2 sites) - Tripartite joint field survey (1st) |
| '13 | | | <p>6th('12)</p> <ul style="list-style-type: none"> - Tripartite joint field survey (2nd) |
| '14 | <p>16th('14.4, Daegu)</p> <ul style="list-style-type: none"> - Selection of 'Dust and sandstorm' as 10-point priority cooperation area - Agreement of continuous joint field survey | | <p>7th('12.10)</p> <ul style="list-style-type: none"> - Tripartite joint field survey (3rd) |
| '15 | <p>17th('14.3, Shanghai)</p> <ul style="list-style-type: none"> - | | |



Excellent review by Shihai Lv



Summary of research results in 2014(Korea)

- Vegetation changes at Ganzhuer and Wangong in Hurunbeier
- Eco-physiological study



Summary of research results in 2014(Korea)

- Soil and soil microorganism survey
- Fecal DNA analysis in restoration sites: survey of preferable and non-preferable plants



Draft of Joint Research Action Plan on Dust and Sandstorm among China, Japan and Korea (2015-2019)

Mid-term Goals

- 1) Monitoring and assessment of conventional remedies: which measures can prevent/mitigate dust/sand generation effectively?
- 2) Evaluation of degradation process and its effect on DSS: how will land use change (transformation from grassland to cropland, intensification, extensification, etc.) affect dust/sand generation?
- 3) Development of new measures to restore degraded land: how can native grassland be restored by new countermeasures?
- 4) Collaboration with WG1 in terms of DSS generation models and hot spots: how can the results be related to models/scales of WG1? / how can the results be applied/ extrapolated to real hot spots?

Request to the China side with potential research subjects

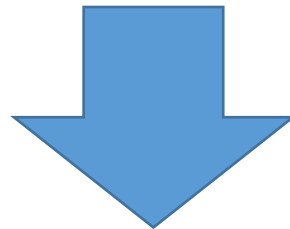
1) Exact information on restoration on study sites:

- 1) What plant species
- 2) When planted and planting methods
- 3) Post-management



- Effect of plantation on vegetative succession and dispersal
- Sustainability and potential utilization of the vegetation

2) Sharing of geographical information in study sites (topographical map)

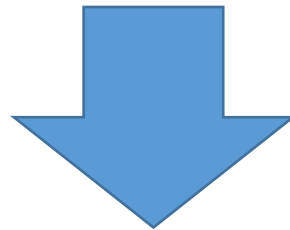


Permanent goal:

Developing **integrated dust and sandstorm management program**
via close intergovernmental cooperation

Request to the China side with potential research subjects

- 1) Flora and fauna shift after restoration effort
- 2) Estimation of resilience and ecosystem health followed by natural and artificial disturbance



Permanent goal:

Developing **integrated dust and sandstorm management program**
via close intergovernmental cooperation

Thank you very much!