

# Environmental and Social Responsible Investment

## *An opportunity or an Illusion?*

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*29<sup>th</sup> Sept 2008*



Association for Sustainable & Responsible Investment In Asia



# Why choose environmental investment?

## Ecosystems provide services to us

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- Forest, grasslands, mangroves, water and soil provide different services to society
- They provide products and regulate temperature
- Ecosystem services affect human well-being and needs such as food, shelter, health and security
- Detoxify and decompose wastes
- Control agricultural pests
- Generate and preserve soils and renew their fertility
- Contribute to climate stability
- Regulate disease carrying organisms



# How business related to eco-system

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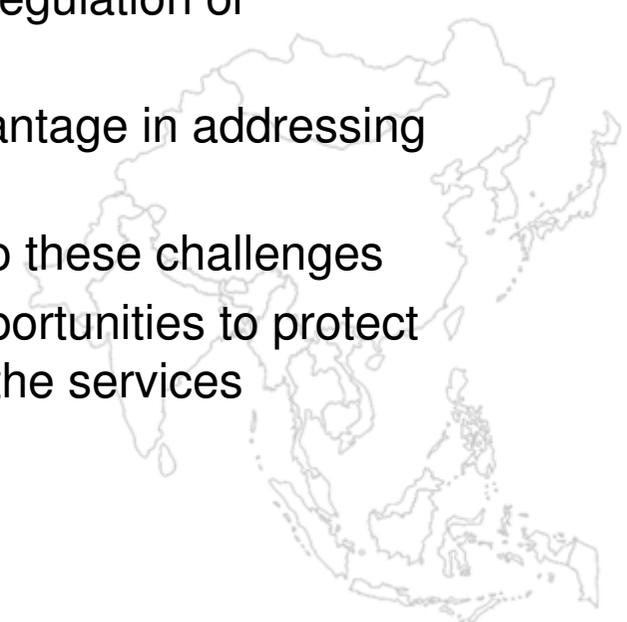
- Everybody and every business rely on eco-system services
- Everybody also contributes to ecosystem change
- Most of the ecosystem services in the world are being degraded or used unsustainably
- If current trends continue, ecosystem services will cease to be available or become more costly in the future
- As an investor, we can and we have the power to change the trend



# Business implication of eco-system change

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- Eco-system services are severely threatened through growth in the scale of human enterprise
- A lot of businesses creating mismatch between short-term needs and long-term social well-being
- Businesses are facing increased governmental regulation or stakeholder pressure
- Leading companies are seeking first-mover advantage in addressing these issues, in an effort to build reputation
- Businesses need to take integrated responses to these challenges
- Investment opportunities arise via identifying opportunities to protect eco-systems and help maintain the provision of the services



# How are eco-systems services disrupted

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- Pollution of land, sea water, surfaces water, underground water and air resources
- Introduction of alien species
- Over-harvesting of fisheries
- Destruction of forest and farmland
- Over-mining causes the erosion of soil
- Green house gas emissions
- Urban sprawl
- Runoff of pesticides, fertilizers, and animal wastes



# Identify investment opportunities

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- Earth's natural capital is being eroded at a rapid rate
- There is still time to lessen the impact by business engagement
- Every threat creates opportunity
- Innovation and technology help minimize the damage to ecosystems and create new business opportunities for those who are aware and prepared
- Opportunities from the above eco-system services disrupted :
  - Water projects
  - Emission reduction
  - Good practice fishery
  - Forestry
  - New energy
  - Organic farming and organic fertilizer
  - Urban development



# Project screening method – a personal experience

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- Set up a basic investment criteria based on the standard of IFC
  - The Environmental and social standards of IFC applies to all projects it finances
  - The standard include investment screening criteria and implementation process
- Design the criteria into a comprehensive and measurable system
- Allocate scores before proceeding
  - Environmental score: external and internal
  - Social score
- First round screening
- After first round screening, use a self-developed check list for social and environmental audit during normal due-diligence process



# Sample on my own score system

	A	B	C	D	E	F
1	Items					
2	1. Total GHG					
3	<b>worksheet</b>	<b>GHG Source</b>	<b>Tons of CO2 Equivalent</b>			
4		Fuel combustion				
5		Electricity				
6		CHP				
7		Road Transport				
8		Process Related GHG Emission				
9		Paper				
10		<b>Total CO2</b>				
11						
12	2. Normalising CO2 Potential					
13	<b>Normalising Factor</b>	<b>Consolidated Company Figures</b>	<b>Tones of CO2 per normalising factor</b>			
14	Turnover					
15	Employees					
16	unit production					
17						
18						
19	3. GHG Profile Over Time					
20	<b>Year</b>	<b>Tones of CO2 Equivalent</b>	<b>% change</b>			
21	2006					
22	2007					
23	2008					
24	2009					
25	2010					



# Sample on pre-investment audit form

## 1. Wages

★ What is the local legal minimum monthly wage for factory workers?	RMB	
★ What is this factory average monthly wage for trained workers?	RMB	
★ What is the surrounding area average monthly wages of same industry?	RMB	
◆ Are there any workers paid by an hourly or on a piece rate system? If by piece rate, is there an effective system to record the number of pieces produced?		
□ Is there an enhanced payment for overtime?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
□ If yes, does it meet local legal requirement?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
◆ Are payments made to the worker directly?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
□ Do workers get paid during training?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
□ If yes, does the payment meet legal requirement?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
★ How are workers paid? By cash, check, other means?		
◆ Are detailed pay slips provided showing workers pay calculations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
★ Deductions from gross wages:		
Meal	\$	<input type="checkbox"/> N/A
Dormitory + utilities	\$	<input type="checkbox"/> N/A
Pension fund	\$	<input type="checkbox"/> N/A
Health insurance	\$	<input type="checkbox"/> N/A
Unemployment insurance	\$	<input type="checkbox"/> N/A
Accident damage insurance	\$	<input type="checkbox"/> N/A
Total	\$	
◆ Is this total deduction less than 50% of the legal minimum wages?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
□ What deductions are not allowed in accordance with local laws?		

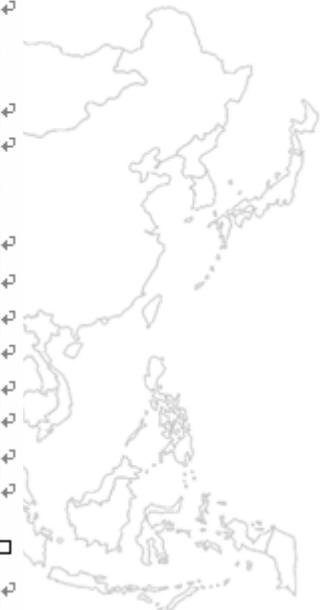


# Sample on special industry pre-investment audit form

▪ **Land base aquaculture audit form**

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Evaluation Date: <input type="text"/>	
<b>Farm Name:</b>	<input type="text"/>
Farm Address:	<input type="text"/>
Country:	<input type="text"/>
Accessibility :	Takes <input type="text"/> Min. from Shenzhen to farm by Taxi
Phone :	<input type="text"/> Fax : <input type="text"/>
Email:	<input type="text"/>
Language Spoken:	Mandarin
<b>Auditor :</b>	<input type="text"/>
<b>Title :</b>	<input type="text"/>
Phone :	<input type="text"/> Fax : <input type="text"/>
Email:	<input type="text"/>
Relationship Of Auditor With Farm :	<input type="text"/>

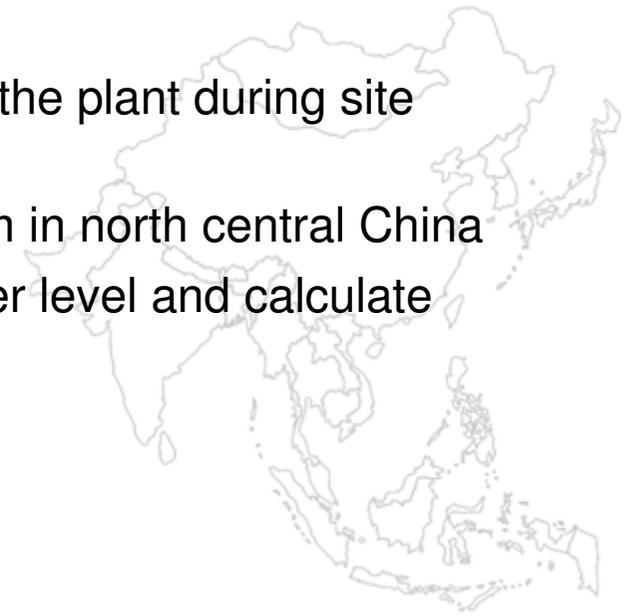


# Address keys issues

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## Example I

- A paper pulp project in Hebei
- Buy the asset of the bankrupted project by open tender
- The original paper pulp plant has a very bad track record
- Paper pulp usually utilize a lot of water
- We discover over 10 well within 500 m radius of the plant during site visit
- Underground water shortage is always a problem in north central China
- Researched the past 10 years underground water level and calculate the natural water compensation



# Address keys issues

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## Example II

- An organic honey project in Chang Bai Shan
- The project owner gave training to the suppliers and help shift from conventional to organic operations
- The owner also helped the farmer to apply for organic accreditation and undertook all the expenses
- China has suffered from alien invasion of honey bee for many years
- We have to research on the detail information of the bee species, year of introduction to China, their ecological impact, etc



# Dark side of environmental investment – corn ethanol

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- A well known example
- US government heavily subsidized the corn ethanol industry
- Corn ethanol energy efficiency is only 1.2 unit from 1 unit input
- Can only save 12% of carbon emission
- To produce a gallon of ethanol takes 1700 gallons of water
- Thirty million acres of land is going to produce the corn ethanol
- Corn prices worldwide have increased by 50% over the past year



# Dark side of environmental projects – wind

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- The risk that wind turbines pose to birds is well known
- Bats are massively killed by wind turbines because:
  - Moving blades cause a drop in pressure
  - Delicate lungs of bats suddenly expand, bursting the tissue's blood vessels
  - Similar as scuba divers
- Resettlement problems
- Landscape alteration



# Dark side of environmental projects – biodiesel in China

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- Biodiesel can be produced with wide variety of feed stock
- The feed stock of some biodiesel plant in China is acidified oil
- Producers use strong acid to extract the remaining oil from the residue of edible oil production plants
- They choose those edible oil production plants in sub-urban or village to avoid environmental monitoring
- After the extraction, they buried the waste without further treatment



# Dark side of environmental projects – forestry

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- China has a tight forestry protection law and system
- The provincial government will issue quotas to the forestry owner and the owners can log certain amount of trees every year
- Some investors bought in old growth forest, make faked report with the local people and get quotas to log down old growth forest
- They grow plantation forest after the log down of old growth forest
- It happened in many parts of China in the past ten years



# Can Environmental and social investment make money?

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- No different from other PE fund
- Investor's IRR expectation will be the same, i.e. 20% or above
- We treat it as an industrial fund, somebody choose property, some body choose IT, we choose environmental related company
- All asset management process will be the same
- Favorable points for environmental and social investment:
  - Some projects may enjoy the extra income from CDM
  - Most of the environmental projects can have the favorable policy from the government include direct money subsidy, lower VAT, etc



# Investment opportunities – wind

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- In the end of 2007, China's installed base of wind power totaled over 6 GW
- In 2020, China's installed base of wind power will total 100 GW
- From 2007 to 2015, 100 billion Yuan will be spent on equipment and component purchases
- The government has mandated that all new wind farms need to have at least 70% local component
- Wind power equipment manufacturers now enjoy a 50% discount on VAT
- Unlike solar, wind equipment manufacturers don't have very strong market players (the scale of Goldwind is much smaller than Suntec)
- Existing manufacturers don't have their proprietary new technology
- None of the major market player can produce 2 MW permanent magnet direct drive generator turbine (information up to April 2008)

# Investment opportunities – forestry

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- Until recently, all the forest in China is managed under the Forestry Department or under collective ownership management
- They have tight regulation to protect forest, but because of poor management and lack of economic incentive this causes a great waste of natural resources
- The second forestry reform started in 2003 and is still undergoing, the basic concept is to decentralize to household management
- Farmer households, a group of farmers, outsiders are all entitled to contract and manage state own forest
- The government also started to issue land titles and allow transaction of land titles
- By setting up appropriate management system, forestry has huge potential in China



# Investment opportunities – Coal bed methane

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- Coal contributes heavily to air pollution
- Until recently, most of Chinese coal mines have wasted the methane in coal mine by releasing it directly into the atmosphere
- Methane contains 21 times more carbon than carbon dioxide, releasing of methane to atmosphere does much more damage to the ozone layer than burning coal
- The Chinese government has rolled out preferential policies for the extraction of coal bed methane, they waived the import duties of those equipments
- The industry has skyrocketed in 2007, but there is still room for new investment
- Most of the investors now are only invested in Shanxi and Shaanxi, but there are still a lot of opportunities in Guizhou or other provinces rich in coal mines



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