



Towards Sustainable Development

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Greening EU Development Cooperation

Module 1

Development, environment and climate change: where do they all meet?

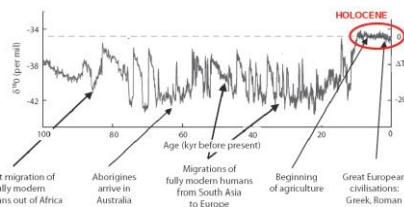
- The Holocene:
 - Earth's environment has been stable for the past 11,700 years

- The Anthropocene
 - Human action is leading to significant environmental change
- Two underlying drivers of change. In last 100 years:
 - Population: 4x increase
 - Economic activity: 20x GDP

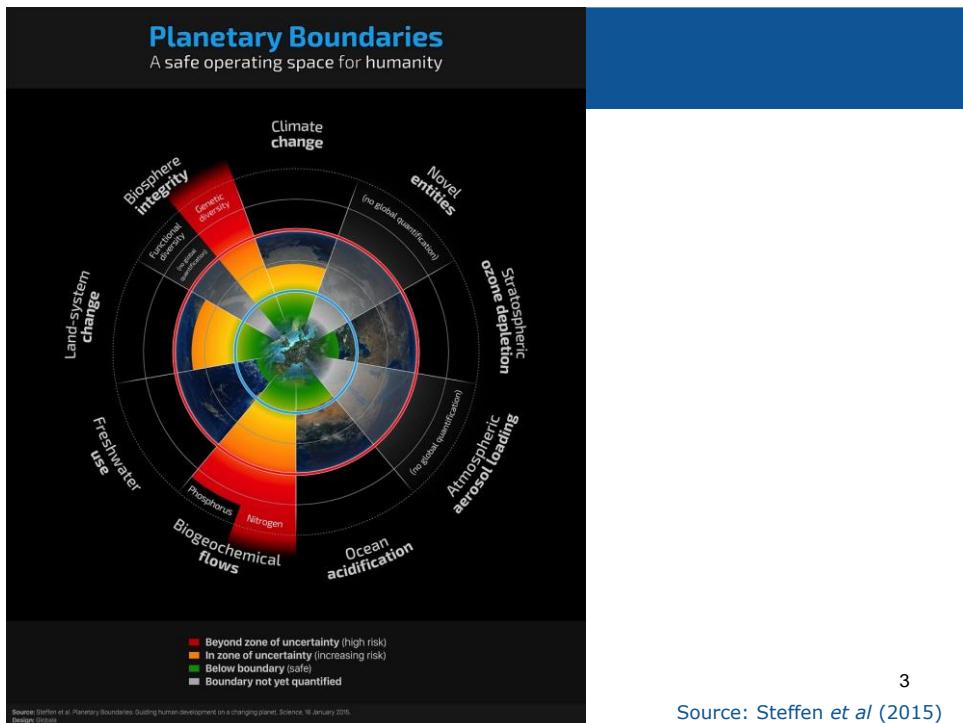
It's Official: Earth Enters Anthropocene Epoch, Leaves Holocene

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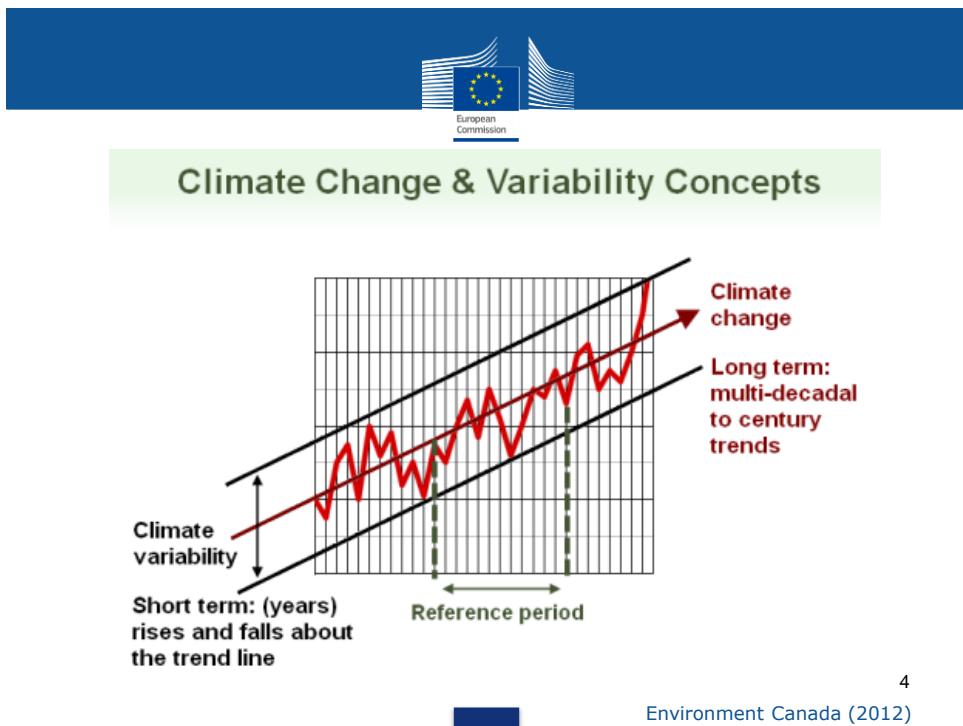
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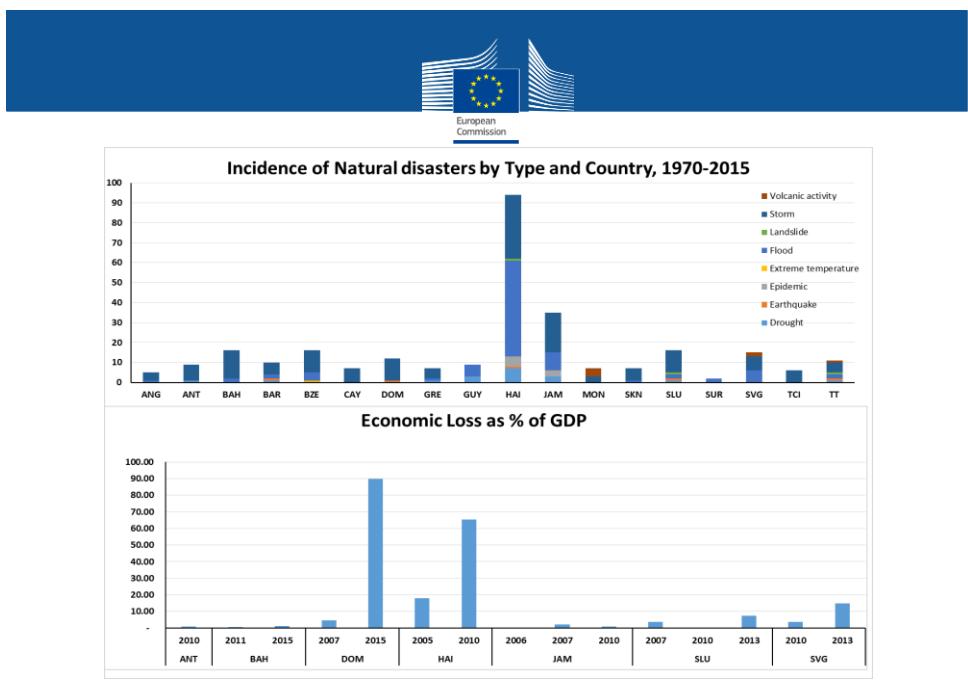
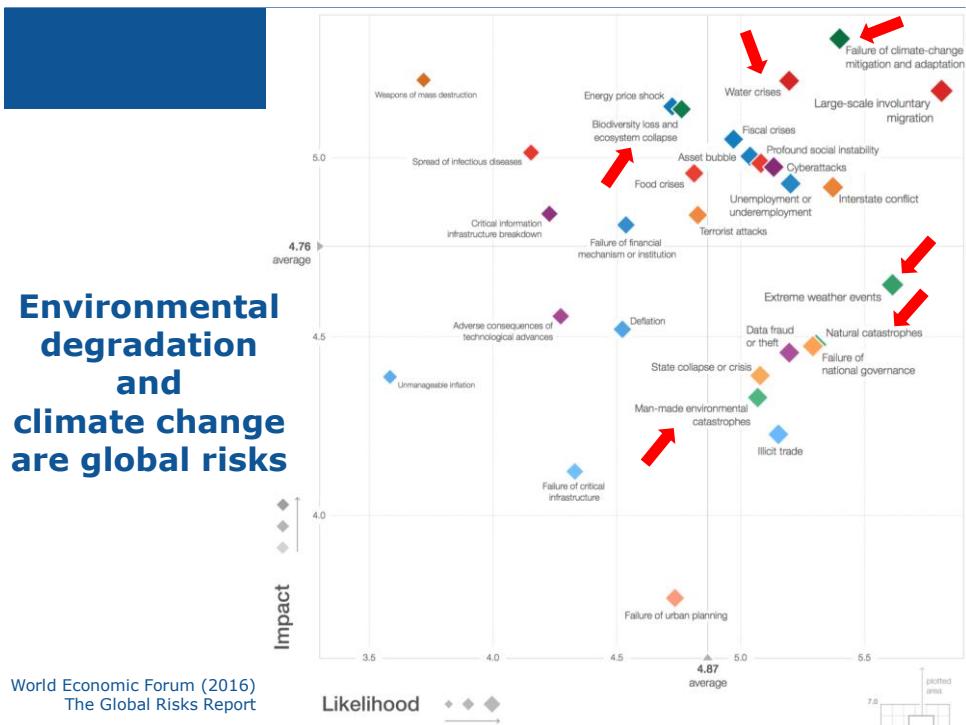
Source: Rockström et al (2009a).

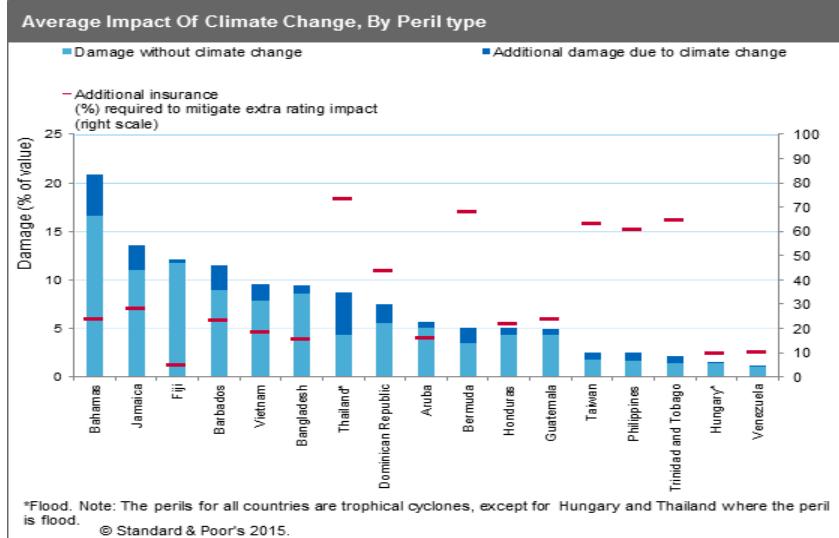


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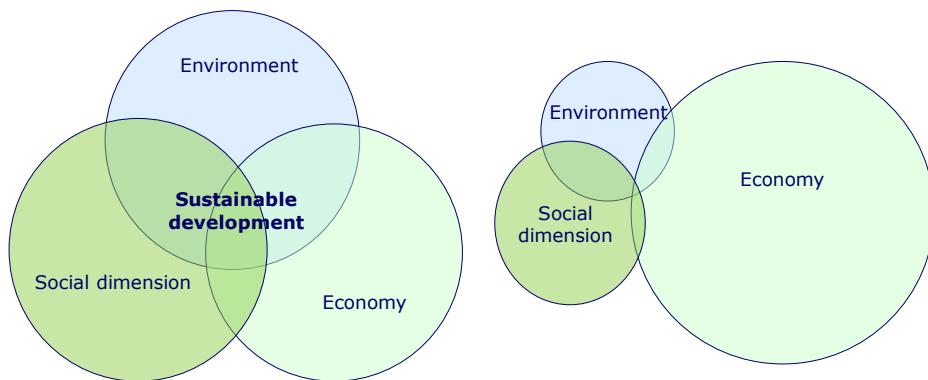


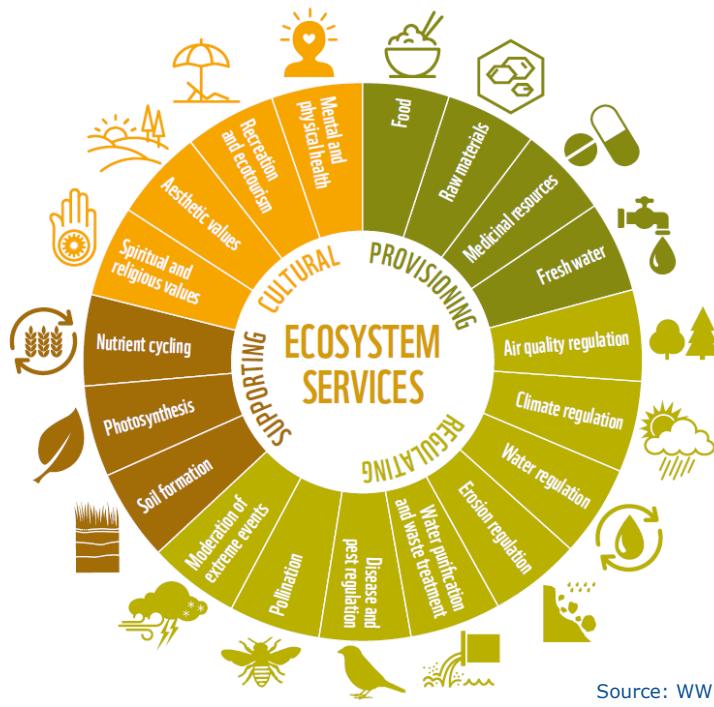
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Sustainable Development which development pathway are we following?





Source: WWF (2016)



Ecosystem Services - Rwanda

- ✓ Due to environmental degradation, poverty has increased and soil loss of 15 million tons/yr, costing the country 2% of its GDP annually – equivalent to the reduction in the country's capacity to feed 40,000 people per year
- ✓ Cost of electricity increased up to 167% per unit cost following degradation of Gishwati forest and Rugezi wetland

Source: UN PEI (2015)



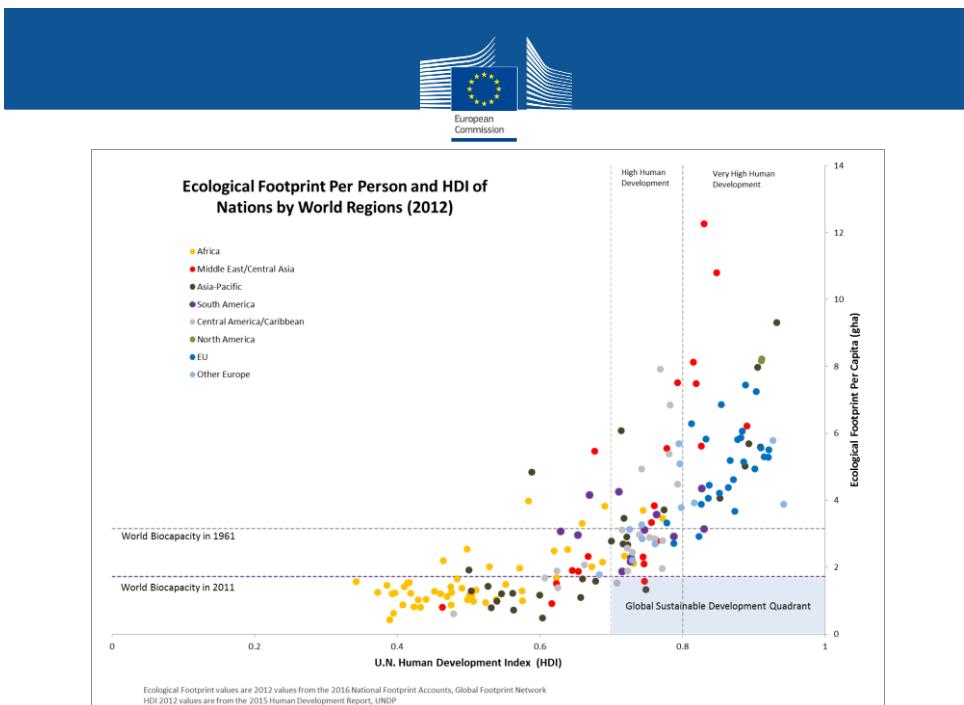


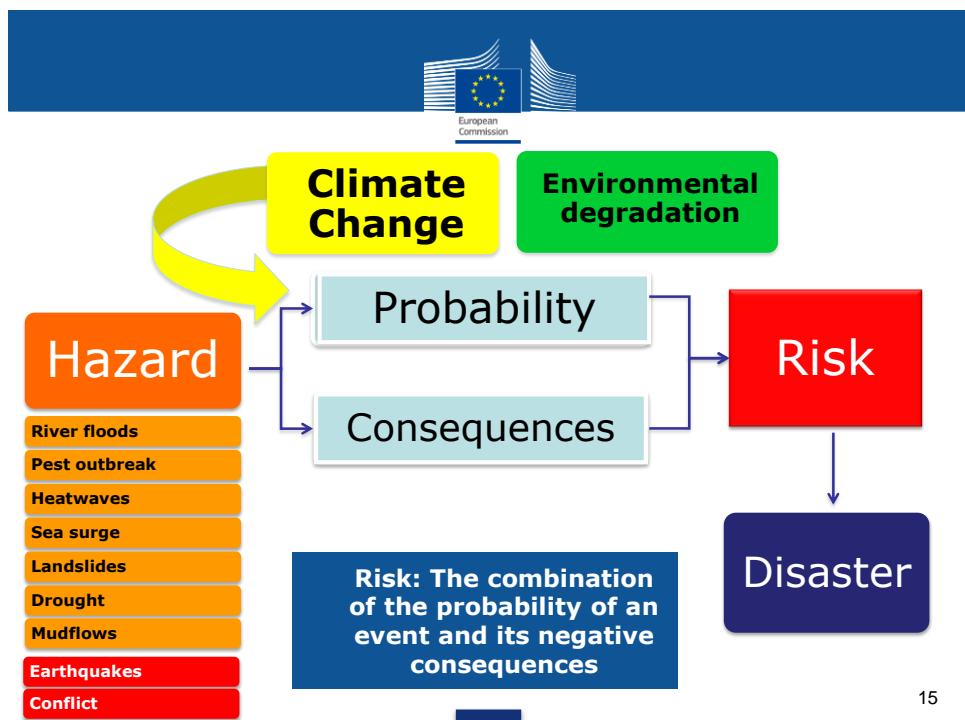
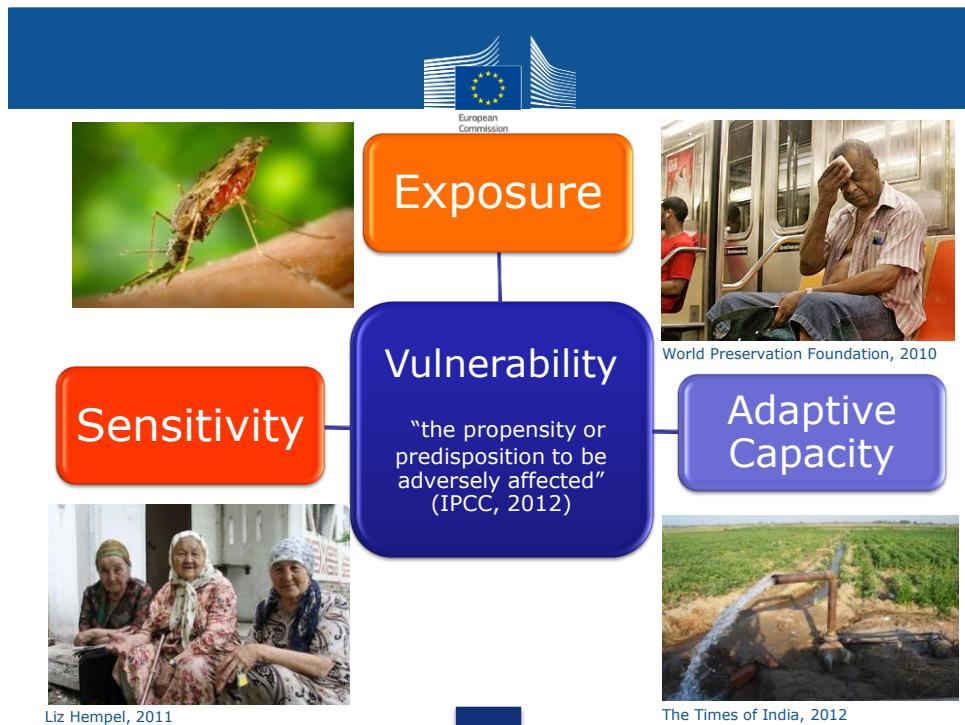
Natural capital is fundamental to developing countries

- In low-income countries natural capital account for about 30% of total wealth, as opposed to 2% in high income countries
- Ecosystem services and other non-market goods make up 50-90% of total source of livelihoods among poor rural and forest-dwelling households worldwide (GDP of the Poor)

Source: World Bank (2011)

Source: TEEB (2010)







Same probability, different consequences



Same consequences, different probability

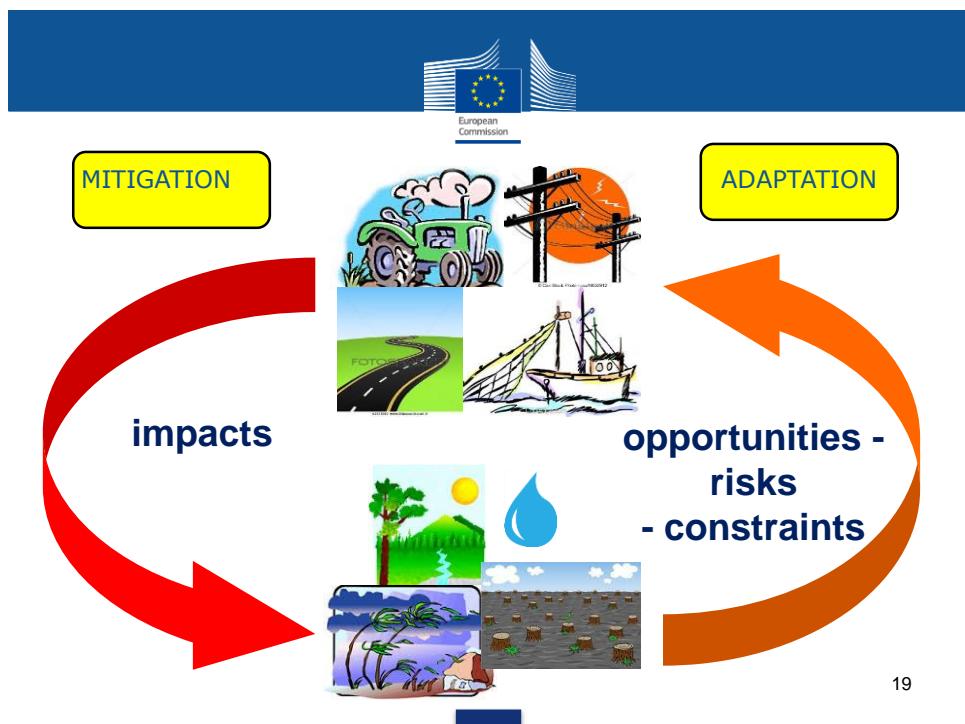


Risk assessment matrix

Likely severity				Probability				
				Such an incident effectively occurred				
People	Assets	Environment	Reputation	Never but conceivable	Once somewhere	Sometimes in our industry	Once recently in our company / local setting	Yearly with us
Lésion	Damage	Effect	Impact	A	B	C	D	E
Negligible	Negligible	Negligible	Negligible	0	1	2	4	7
Light (FAC)	Light	Light	Light	1	2	4	8	33
Minor (MTC, LTI=8j)	Minor	Minor	Limited	2	3	7	12	99
Serious (PPD, LTI)	Important	Localised	Local	3	4	15	32	227
1 a 3 fatalities, PTD	Serious	Important	National	4	24	78	130	379
Multiple fatalities	Extensive	Massive	International	5	72	150	430	809
								1525

- Intolerable : remove hazard / risk
- Demonstrate risk control
- ALARP zone: normal control measures on the work place

Source: Palerm et al (2005)





References

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