Award-winning ecologist on the financial crisis:

The financial markets have a lot to learn from eco-systems and crisis

Politicians and policy-makers all over the world struggle to stabilize the global financial system. But perhaps regulations and command-and-control won't do much good. Instead, governments should take a closer look at the research on resilience – the capacity of an eco-system to cope with shock and then rebuild and renew itself.

This is the message from two prominent researchers on resilience, Professor Crawford "Buzz" Holling, who receives the Volvo Environment Prize on Nov 6 in Stockholm, and Professor Johan Rockström, executive director at the Stockholm Resilience Centre, Stockholm University.

"In the financial system slow changes have been accumulating for years, such as levels of indebtedness. None on their own seemed big enough to trigger a response", says Johan Rockström.

"But then you get a trigger, such as the fall of an investment bank, and the whole system can then flip into an alternative stable state, with new rules, such as mistrust."

The analogy might seem far-fetched, but the fact is that the events on the financial markets can be compared to life in a pond. Normally life in a pond ticks over just fine. But the wrong set of circumstances such as a minimal change of chemicals, can all of a sudden trigger an explosion of algae, which then goes on to strangle all other life in the pond. In spite of human attempts to control eco-systems - such as fishing quotas or supervision to protect crops- fish populations suddenly disappear or crops are attacked by insect outbreaks.

This is because most systems – in nature but also human and social systems – are complex and interconnected. A small change can lead to rapid changes, says Buzz Holling, a Canadian ecologist and widely regarded as the father of resilience thinking.

"Crisis is inevitable", he says. "This is how eco-systems work".

Buzz Holling's research has received more attention during recent years and has started to influence the governance of natural systems. Creating resilience is not about avoiding crisis and rapid changes – that is simply not possible – rather about making sure that the systems contain diversity so that they can recover and rebuild after chock.

"This should be considered by the people trying to stabilize global finance" says Johan Rockström. As in any other complex system the instability can spread, and lead to a collapse of the whole financial system.

2008 is the nineteenth year in which the Volvo Environment Prize is awarded. The Volvo Environment Prize Foundation awards the prize to individuals who explore the way to a sustainable world. The Volvo Environment Prize is awarded by an independent foundation, assisted by a Prize Jury composed of internationally recognized experts in the environmental field. Since 1990 the prize has been awarded to 35 individuals. Among the winners are many prominent names, including three Nobel Prize Winners.

The Stockholm Resilience Centre is doing research on resilience and sustainable development and was founded in 2007 with a grant of 100 million Swedish Kronor (€10 million) from MISTRA, the Foundation for Strategic Environmental Research.