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The scientific foundation for a soil governance policy in Europe

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At the EGU session on erosion last year it was recognised by Thornes (2008) that considerable advances had been made in understanding land and soil degradation processes but that at the same time the findings were not being applied to tackle many of the environmental problems being faced as a result of the development and appropriation of natural resources. Why are the soil and land under so much threat when so much is known and solutions and causes are obvious? Can it be that the European approach of integrating environmental policy into different systems and sectors is not working? If new policies are needed what should these be on the basis of scientific knowledge

Four areas of scientific data and knowledge will be described (The EGU, The WG reports of DG ENV, the European Soil Bureau and other countries (USA , Russia and China)

Thousands of research studies, including maybe more than one hundred presented at the EGU sessions on soils during the last few years had identified the causes and suggested solutions. There is an increasing level of understanding of soil and landscape scale processes that could be applied to improve critical soil functions that would protect people from flooding and loss of livelihood. The fundamental ecosystem processes that are being deregulated by human actions are often easy to correct and restore. Most of the research has demonstrated that the threats were often the consequences of agricultural and environmental policies and the way that these were being implemented for the benefit of specific interest groups. Based on this knowledge what kind of soil governance should we create.

Another resource are the working group reports that analysed the threats facing European soils. In 1998, under the leadership of Germany and Sweden, The European Community decided that it should have a Soil Strategy to address the threats facing European soils. A study by the Commission had identified erosion, compaction, sealing contamination and loss of organic matter as threats that were seriously threatening the future security of Europe . To obtain political legitimisation for soil protection legislation, T he European Environment Ministry (DG) organised public consultations and established the European Soils Forum which would investigate these threats from using the DPSIR concepts and the concept of soil functions. Reports were prepared by many hundreds if not a thousand soil scientists and practioners and used to prepare a soil framework Directive. However, when all of the working group reports are considered these constitute an immense resource that could have been applied in an holistic and integrated way to construct a soil protection strategy. Instead of this it was largely ignored.

Much can be learned from other countries that have implemented integrated soil land and water conservation strategies. Land use change decisions should be based not on economic or financial choices alone but they should be based on insight into the earth surface processes and how these are being changed by human actions. Far more knowledge about geo-eosystems should be present at decision making levels. In particular an adaptive management approach to explaining and reporting data and impacts would bring much more clarity. The way in which environmental facts and data is politically marketed should be challenged by scientists.