



Fig.5 Land subsidence in Sumatra and around the world using Stephen equation

Histosols are used for crop production and forestry, as well as wildlife and recreation. The organic material can also be harvested for horticultural potting soil and for heating and electricity. They can be production crop soils; however extensive drainage is required.

Unfortunately, drainage trigger to subsidence. Subsidence is the loss of soil depth. Subsidence happens when water is drained from the profile. The organic materials “float” in wet conditions and become more compact when drained. Once drained, the soil begins to oxidize and microbes consume the organic matter and slowly turn it into carbon dioxide with time. Subsidence, as a rule of thumb, occurs at a rate of 1 inch of soil per year. This creates problems for drainage ditch maintenance and long-term uses of agricultural soils. Histosols, when drained, are also vulnerable to fires.

IV. CONCLUSIONS

The state-of-the-art in land-subsidence analysis progresses unevenly because the degree of understanding of various subsidence mechanisms varies. The most study has been directed to subsidence related to man’s engineering activities. This is facilitated by the availability of data on quantities of subsurface material removed (or injected), on rates and duration of extraction operations, and on changes in ground-water levels. Natural processes are not as easily quantified.

A case of land subsidence is necessarily the integrated surface expression of whatever processes may be active at that site, whether natural or manmade or both. A working hypothesis as to the mechanism or combination of mechanisms operative at the specific site is requisite for designing control measures. The complexity of subsidence mechanisms and their interaction requires a cooperative effort among different disciplines, both in collecting physical evidence and in developing the rationale for the processes involved. The hydrologic sciences have been and will continue to be, significant contributors to land subsidence investigations.

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