CONCORSO PUBBLICO, PER ESAMI, A N. 1 POSTO DI CATEGORIA D, POSIZIONE ECONOMICA D1, AREA TECNICA, TECNICO-SCIENTIFICA ED ELABORAZIONE DATI, PER LE ESIGENZE DEL DIPARTIMENTO DI AGRARIA DELL'UNIVERSITA' DEGLI STUDI DI NAPOLI FEDERICO (COD. RIF. 2020) INDETTO CON DECRETO DEL DIRETTORE GENERALE N. 438 DEL 30.06.2020 E DEL QUALE E' STATO DATO AVVISO SULLA GAZZETTA UFFICIALE IV SERIE SPECIALE – CONCORSI ED ESAMI N. 53 DEL 10.07.2020

QUESITI ESTRATTI ALLA PROVA ORALE DEL 22 SETTEMBRE 2020 SUDDIVISI PER SCHEDA SORTEGGIATA

QUESITO SULLE ANALISI DI LABORATORIO E DI CAMPO PER LA DETERMINAZIONE DELLE PROPRIETA' IDRAULICHE DEL SUOLO
Metodi per la determinazione della curva di ritenzione idrica su campioni di suolo indisturbato

QUESITO SULLE TECNICHE DI MONITORAGGIO DI VARIABILI AGRO-AMBIENTALI
Stazioni agro-meteorologiche digitali: componenti, sensori e acquisizione dei dati.

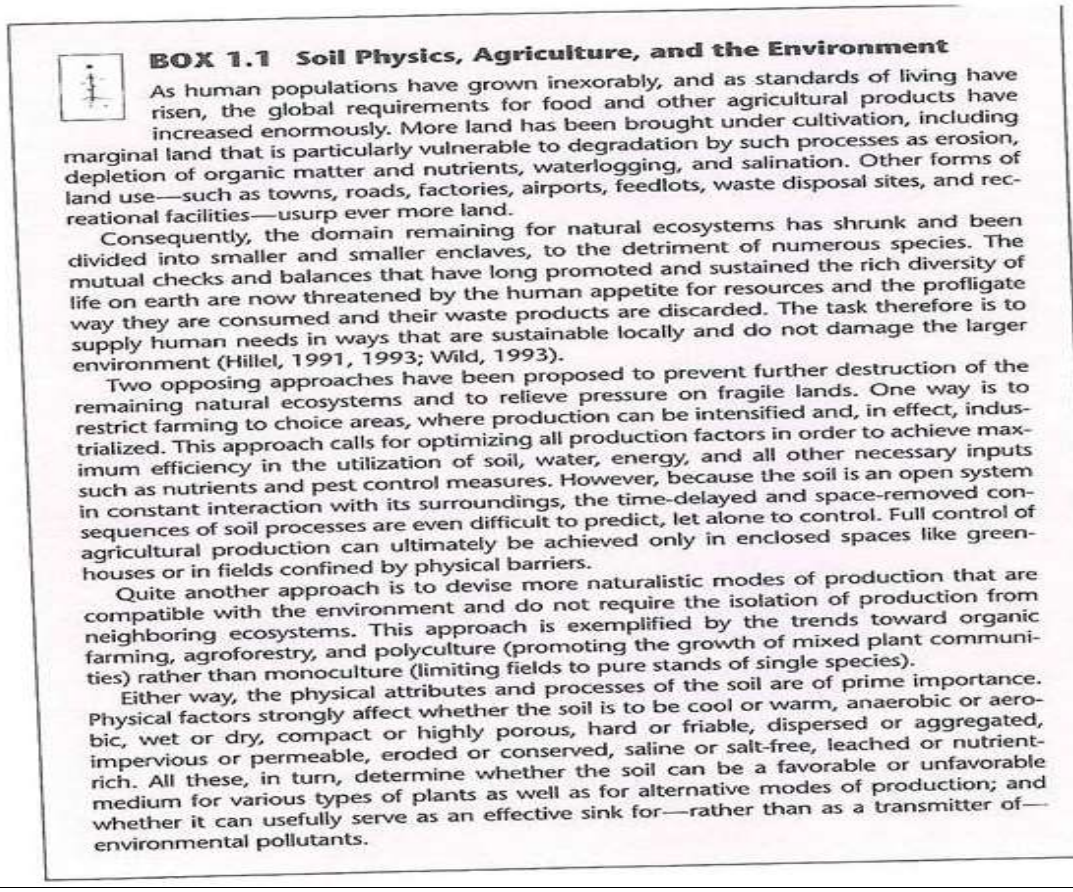
QUESITO SUL BILANCIO IDROLOGICO E IDROGEOLOGICO
Principali termini del bilancio idrologico di un suolo irriguo

QUESITO SULLA SALVAGUARDIA DELL'AMBIENTE E DEGLI ECOSISTEMIAGRO-FORESTALI NONCHE' ALLA GESTIONE TECNICA DI UN PROGRAMMA DI RICERCA
Indicazioni tecniche per la prevenzione dall'erosione dei suoli

QUESITO VOLTO AD ACCERTARE LA CONOSCENZA DELL'USO DELLE APPARECCHIATURE E DELLEAPPLICAZIONI INFORMATICHE PIU' DIFFUSE CON PARTICOLARE RIFERIMENTO AI SOFTWARE APPLICATIVI DELLA SUITE MS OFFiCE (WORD, EXCEL, POWERPOINT) E DEI SISTEMI OPERATIVI WINDOWS, DI SOFTWARE GIS E DI ANALISI DI IMMAGINI E ORTO FOTO PER ESTRARRE DATI AMBIENTALI E INFORMAZIONI QUANTITATIVE
Descrivere come effettuare un'analisi per la correlazione statistica tra due insiemi di dati sperimentali in Excel

TESTO BREVE IN LINGUA INGLESE DA LEGGERE E TRADURRE VOLTO AD ACCERTARNE IL GRADO DI CONOSCENZA

1.



BOX 1.1 Soil Physics, Agriculture, and the Environment

As human populations have grown inexorably, and as standards of living have risen, the global requirements for food and other agricultural products have increased enormously. More land has been brought under cultivation, including marginal land that is particularly vulnerable to degradation by such processes as erosion, depletion of organic matter and nutrients, waterlogging, and salination. Other forms of land use—such as towns, roads, factories, airports, feedlots, waste disposal sites, and recreational facilities—usurp ever more land.

Consequently, the domain remaining for natural ecosystems has shrunk and been divided into smaller and smaller enclaves, to the detriment of numerous species. The mutual checks and balances that have long promoted and sustained the rich diversity of life on earth are now threatened by the human appetite for resources and the profligate way they are consumed and their waste products are discarded. The task therefore is to supply human needs in ways that are sustainable locally and do not damage the larger environment (Hillel, 1991, 1993; Wild, 1993).

Two opposing approaches have been proposed to prevent further destruction of the remaining natural ecosystems and to relieve pressure on fragile lands. One way is to restrict farming to choice areas, where production can be intensified and, in effect, industrialized. This approach calls for optimizing all production factors in order to achieve maximum efficiency in the utilization of soil, water, energy, and all other necessary inputs such as nutrients and pest control measures. However, because the soil is an open system in constant interaction with its surroundings, the time-delayed and space-removed consequences of soil processes are even difficult to predict, let alone to control. Full control of agricultural production can ultimately be achieved only in enclosed spaces like greenhouses or in fields confined by physical barriers.

Quite another approach is to devise more naturalistic modes of production that are compatible with the environment and do not require the isolation of production from neighboring ecosystems. This approach is exemplified by the trends toward organic farming, agroforestry, and polyculture (promoting the growth of mixed plant communities) rather than monoculture (limiting fields to pure stands of single species).

Either way, the physical attributes and processes of the soil are of prime importance. Physical factors strongly affect whether the soil is to be cool or warm, anaerobic or aerobic, wet or dry, compact or highly porous, hard or friable, dispersed or aggregated, impervious or permeable, eroded or conserved, saline or salt-free, leached or nutrient-rich. All these, in turn, determine whether the soil can be a favorable or unfavorable medium for various types of plants as well as for alternative modes of production; and whether it can usefully serve as an effective sink for—rather than as a transmitter of—environmental pollutants.

QUESITO SULLE ANALISI DI LABORATORIO E DI CAMPO PER LA DETERMINAZIONE DELLE ROPRIETA' IDRAULICHE DEL SUOLO
Individuazione della curva di ritenzione in campioni di suolo prelevati mediante trivella.

QUESITO SULLE TECNICHE DI MONITORAGGIO DI VARIABILIAGRO-AMBIENTALI
Tecniche per il monito raggio in situ ed in continuo del contenuto idrico dei suoli

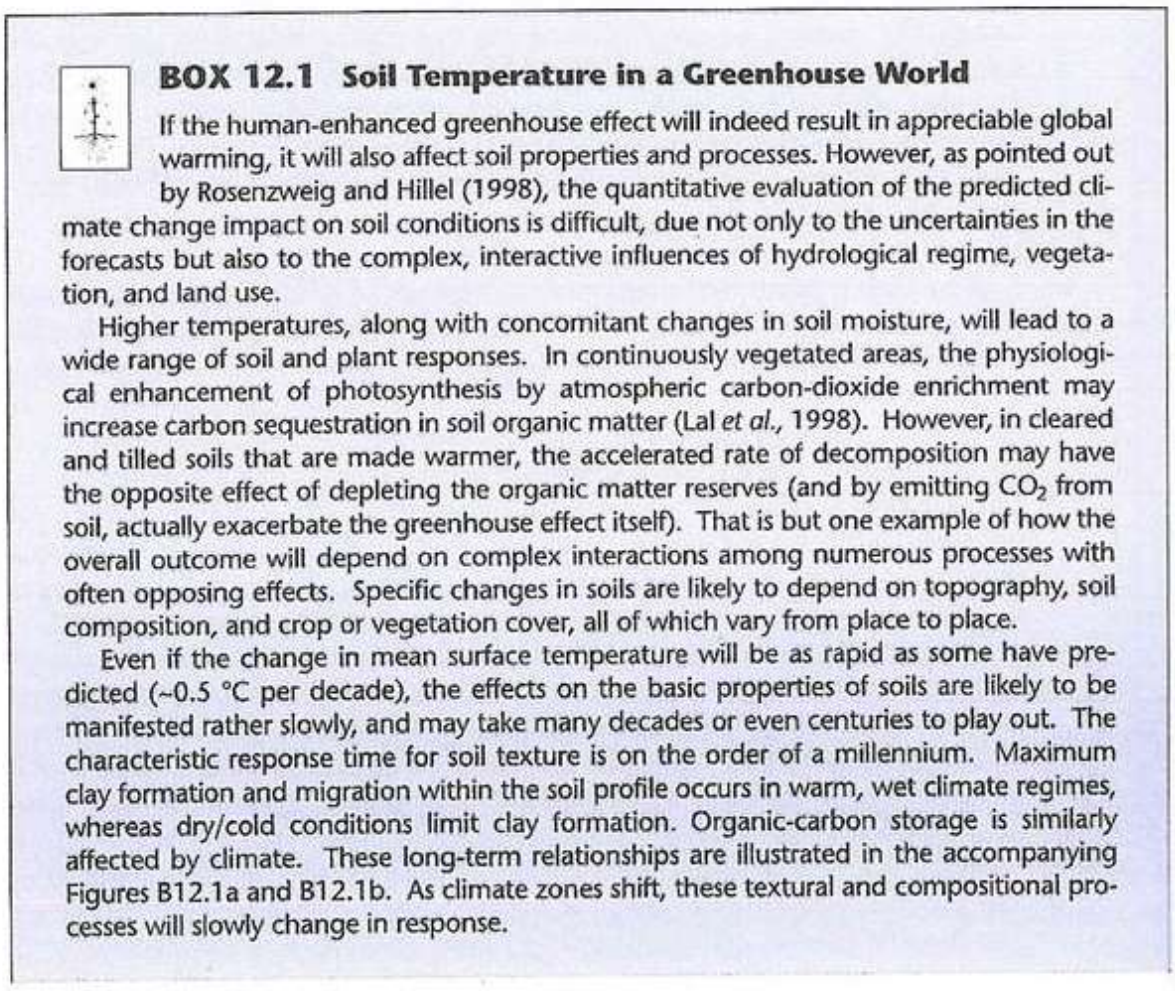
QUESITO SUL BILANCIO IDROLOGICO E IDROGEOLOGICO
Metodi di valutazione della risorsa idrica sotterranea

QUESITO SULLA SALVAGUARDIA DELL'AMBIENTE E DEGLI ECOSISTEMI AGRO-FORESTALI NONCHE' ALLA GESTIONE TECNICA DI UN PROGRAMMA DI RICERCA
Struttura logica per la redazione di un rapporto conclusivo di un progetto di ricerca.

QUESITO VOLTO AD ACCERTARE LA CONOSCENZA DELL'USO DELLE APPARECCHIATURE E DELLE APPLICAZIONI INFORMATICHE PIU' DIFFUSE CON PARTICOLARE RIFERIMENTO AI SOFTWARE APPLICATIVI DELLA SUITE MS OFFICE (WORD, EXCEL, PO'v\/ERPOiNT) E DEi SISTEMI OPERATIVI WINDOWS, DI SOFTWARE GIS E DI ANALISI DI IMMAGINI E ORTOFOTO PER ESTRARRE DATI AMBIENTALI E INFORMAZIONI QUANTITATIVE
Procedure per l'ordinamento ed ìl filtraggio di tabelle di dati in Excel

TESTO BREVE IN LINGUA INGLESE DA LEGGERE E TRADURRE VOLTO AD ACCERTARNE IL GRADO DI CONOSCENZA

4.



BOX 12.1 Soil Temperature in a Greenhouse World

If the human-enhanced greenhouse effect will indeed result in appreciable global warming, it will also affect soil properties and processes. However, as pointed out by Rosenzweig and Hillel (1998), the quantitative evaluation of the predicted climate change impact on soil conditions is difficult, due not only to the uncertainties in the forecasts but also to the complex, interactive influences of hydrological regime, vegetation, and land use.

Higher temperatures, along with concomitant changes in soil moisture, will lead to a wide range of soil and plant responses. In continuously vegetated areas, the physiological enhancement of photosynthesis by atmospheric carbon-dioxide enrichment may increase carbon sequestration in soil organic matter (Lal *et al.*, 1998). However, in cleared and tilled soils that are made warmer, the accelerated rate of decomposition may have the opposite effect of depleting the organic matter reserves (and by emitting CO_2 from soil, actually exacerbate the greenhouse effect itself). That is but one example of how the overall outcome will depend on complex interactions among numerous processes with often opposing effects. Specific changes in soils are likely to depend on topography, soil composition, and crop or vegetation cover, all of which vary from place to place.

Even if the change in mean surface temperature will be as rapid as some have predicted (~0.5 °C per decade), the effects on the basic properties of soils are likely to be manifested rather slowly, and may take many decades or even centuries to play out. The characteristic response time for soil texture is on the order of a millennium. Maximum clay formation and migration within the soil profile occurs in warm, wet climate regimes, whereas dry/cold conditions limit clay formation. Organic-carbon storage is similarly affected by climate. These long-term relationships are illustrated in the accompanying Figures B12.1a and B12.1b. As climate zones shift, these textural and compositional processes will slowly change in response.

Per ordine del Presidente
Il segretario
f.to Nicola Gianniello