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R. Hanson	TROPISOILS	R. Affleck	OICD
T. Gill	AID	J. Malcolm	AID

**WORLD SOIL RESOURCES, SCS-NHQ
SOIL MANAGEMENT SUPPORT SERVICES (SMSS-OICD-
AID)
OF TROPISOILS**

QUARTERLY REPORT -- FY 1992

UP-DATED: April 3, 1992

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 Dr. Hari Eswaran
 National Leader, WSR

**WORLD SOIL RESOURCES (WSR)
SOIL MANAGEMENT EFFORT SERVICES**

Goal:

To assist LDCs implement policies and commitment to sustainable land management for food and fiber production and conservation of natural resources.

Mission:

WSR and SMSS are dedicated to assist U.S. and less developed country (LDC) institutions to improve the quality of their soil resource inventories to enhance their abilities in attaining a sustainable agriculture and have the capability to address the problems of poverty, hunger, and environment. In pursuit of this, WSR/SCS-USDA and SMSS support the following:

1992 ACTIVITY AREAS

- * Assist in the strengthening of LDC institutions and human resources to address the challenges of sustainable agricultural development.
 1. Assist LDCs in developing soil survey programs and/or components of such programs including the utilization of soil survey information.
 2. Develop training programs in LDCs to meet their needs in the areas of soil survey, soil classification and soil management.
 3. Provide mechanisms for exchange of information through technical workshops, soil correlation meetings and participation in technical meetings organized by other organizations.

- * **Collaborate with NCSS and NSSC in the development of technologies in priority areas to address global and regional constraints to agricultural development and discriminatory use of soils.**
 1. Act as the link between the SCS National Soil Survey Center and national and international soil survey organizations world wide.
 2. Develop and maintain a data base on world soils including GIS, to backstop national and international efforts in systems modelling and other uses of soil information.
 3. Maintain relationships with foreign donor agencies and the International Agricultural Research Centers and collaborate in mutually beneficial activities.
- * **Use the resources of SCS, USDA and NCSS, to provide the scientific expertise to other Federal Government Agencies and international donors to carry out their respective mandates.**
 1. Coordinate WSR activities with activities of the National Soil Survey Center, Federal agencies, and International agencies and institutions to ensure that information is integrated and shared.
 2. Provide information on soils of foreign countries to U.S business, technical agencies, universities, publishers and where possible, arrange contacts in foreign countries to foster relationships.
 3. Actively support the EEO program and communicate this support to customers; assure equality in all activities; civil rights responsibilities include the obligation to cooperate with and provide planning support services to individuals, groups, and publics without regard to race, religion, sex, or national origin.
- * **Assist in the development of networks of scientists and institutions to foster the development and application of innovative technologies in soil research and management.**
 1. Provide support services to the Agency for International Development (AID), AID country Missions, and other international and regional institutions in the areas of problem identification, technical assistance in soil surveys and soil classification, training in these areas, and technology transfer.
 2. Assist in the development and distribution of technical monographs, newsletters and other documents including

computer softwares to US and LDC institutions and scientists.

3. Contribute to the utilization of soil information for sustainable land management and global climate change assessments.

STAFF RESPONSIBILITIES

An outline of the current staff, the organizational structure, and their respective areas of responsibility is provided below.

Hariharan, ESWARAN

Soil Scientist, GM-470-15

National Leader, World Soil Resources (WSR)

The incumbent has national responsibilities to coordinate a program to:

1. document soils resources of the world;
2. develop and guide activities of WSR to provide services to SCS, and domestic and international institutions in the area of soil resources of the world, their evaluation, use and management;
3. phase out the current activities of the Soil Management Support Services and assist SCS and assist AID in the development of a new project;
4. backstop the Director, Soil Survey, and National Leaders at NSSC, State and NTCs, in the areas of project development, data bases, and when requested information on soil resources of the world;
5. provide the liaison between the National Soil Survey Center staff and their international counterparts.

David L. YOST

Soil Scientist, GM-470-13

Soil information specialist

The incumbent provides liaison to federal agencies and other users of world soils information, including information on soils of the U.S. He also collaborates with international organizations in developing the base data required for the international Soil and Terrain (SOTER) project of UNEP. Incumbent's special area of responsibility is Africa. He is also WSR's point man for activities related to world soils data bases.

Benjamin F. SMALLWOOD
Soil Scientist, GM-470-13
Resource evaluation specialist

Incumbent documents and maintains a data base of soil climate in the US and selected countries of the world, and utilize this and other information to assist in the development of Major Land Resource Areas (MLRA) evaluation of countries or regions. He is also WSR's point man for EEO/CR activities.

Vacant
Soil Scientist, GS-470-13
Geographic Information Specialist

The incumbent, in collaboration with Cartographic and GIS staff of SCS, provides the technical backstopping in the area of Geographic Information Systems and its application in soil related fields. Incumbent also liaises with national and international organizations in developing standards and quality control procedures in the area of GIS. Incumbent will also develop a training program in application of computer technology in soil surveys. Area of responsibility is world-wide. Assists with the development of SOTER, GLASOD, and GCC interpretative maps.

Lorraine JAMISON
Secretary, GS-318-6
Secretary to National Leader, WSR

The position provides secretarial assistance to the National Leader of WSR and is responsible for a variety of secretarial, typing, clerical, and office management tasks for staff of WSR.

Temporary Fulltime

Paul Reich, 6738 Fordcrest Rd., Baltimore, MD 21237
(301) 687 5160
Geographer
January 23 - May 24 (intern); June 17-September 15 (Summer)
October 1-September 30, 1992.

Mr. Reich is a graduate of the University of Maryland, Baltimore Campus and majoring in Geography. He is compiling the global data base on soil carbon.

Temporary transfer staff

None

Volunteers and Interns

Evert VAN DEN BERG

Programmer

October 1 to September 30

Mr. Van den Berg assists WSR in the development of site-specific models for soil moisture and temperature regimes based on Franklin Newhall's model modified by Dr. A. Van Wambeke. He is currently working on long term climatic data to evaluate incidence of moisture stress.

Up-dated: April 3, 1992

WSR-SMSS QUARTERLY REPORT - FY 1992

FY 1992

- September 29 - October 1. H. Eswaran, E. Van Den Berg, B. Smallwood, P. Reich, and T. Leverman present poster on Soil CLimate at North American Accociation for Environmental Education.
- October 14-17. Ben Smallwood and Paul Reich attend Global Climate Change at Lincoln, NE.
- October 14-17. Hari Eswaran invited to present lectures at International Fertilizer Development Center, Muscle Shoals, AL, at Training Workshop on Sustainable Agriculture.
- October 27-November 1. Hari Eswaran, Ben Smallwood and E. Van den Berg attend Annual Meeting of Agronomy Society of America. Present papers and a computer session.
- November 30- December 03. Ben Smallwood attends meeting at Tuskegee, Alabama.
- December 5 - 10. Hari Eswaran invited to present the Dr. R.V. Tamhane Memorial Lecture during the 56th Annual Meeting of the Indian Society of Soil Science, New Delhi.
- January 6-8. Hari Eswaran, Ben Smallwood, and Eddie Van Den Berg attend meeting on Global Climate Change at Lincoln, NE.
- January 12-17. Hari Eswaran attend meeting on International Reference Base at Montpellier, France.
- January 17- 31. Hari Eswaran visits South Africa to arrange 1993 Symposium on 'Use and management of soils on old geomorphic

- surfaces'. Also presents paper on sustainable agriculture at annual meeting of South African Society of Soil Science.
- February 7 - March 1. Tommy Calhoun and Dave Yost visit Egypt and Kenya to characterize sites, visit institutions and collate soils information.
- February 9 to 14. Hari Eswaran attends State Soil Scientists of SCS meeting at Mobile, Alabama.
- February 9 to 13. Paul reich attends training on 'Introduction to SCS'.
- February 16-19. Paul Reich attends training on INFORMIX
- February 20-22. Hari Eswaran attends TROPISOILS TAC meeting at Raleigh, North Carolina.
- March 1-6. Maury Mausbach attends CO-DATA Meeting in France.
- March 6-20. Hari Eswaran in Morocco as consultant to MIAC project of USAID/Rabat.
- March 16-21. Stan Buol (North Carolina) attends Laterite Correlation meeting at Wageningen, Netherlands.
- April 5-9. Hari Eswaran to Lincoln, NE for NASIS meeting/SCS
- April 14 to June 16. Paul Reich attends Graduate School (evenings) to study PASCAL Programming language.
- April 15. Hari Eswaran invited by U.S. Information Agency to participate on Satellite-video conference with Pakistan on "Sustainable Agriculture". pm Seminar on "Sustainable Land Management" for AID-R&D/AGR/RNR.
- April 22-May 2. Hari Eswaran and Richard Arnold to Nairobi, Kenya to discuss soil/water/nutrient network of IFDC/IBSRAM
- May 6-9. SMSS/TROPISOILS meeting in Lincoln, NE. Hari Eswaran
- May 11-16. Hari Eswaran training at Ft.Worth on "Supervizing for Excellence".
- June 8-12. Ben Smallwood attends MWNTC Meeting, St. Paul.
- June 14-19. Dave Yost and Eddie Van Den Berg attend SNTC Meeting at Ashville, N.C.
- June 21-26. Hari Eswaran and Paul Reich attend West NTC Meeting at Flagstaff, Arizona.
- July 5-18. Hari Eswaran and Charles Gordon (Montana) on Science and Technology Exchange to Mongolia.

July 12-25. Dave Yost and Eddie Van den Berg attend Soil Information Systems Workshop in Orgeon/California.

September 27 to October 3. Workshop on Soil resilience and sustainable land use, Hungary.

November 1-6. ASA meeting, Minnesota.

November 10-14. ISSS Council meeting at Acapulco, Mexico.

FY 1993

November 7-12. ASA meeting

<u>OUTPUTS</u>

Collaborating Institutions (Only those with whom we have an activity this fiscal year)

International

Indian Council for Agricultural Research, New Delhi, India
 Indian Agricultural Research Institute, New Delhi, India
 Department of Agriculture, Kerala, India
 Konkan Agricultural University, Dapoli, India
 International Crops research Institute for the Semi-Arid Tropics,
 Hyderabad, India
 University of Petoria, Petoria, South Africa
 Drainage and Irrigation Department, Johannesburg, South Africa
 International Board for Soil Research and Management (IBSRAM)
 Thailand

Domestic

USDA, Economic Research Service
 Dept. of Agronomy, Iowa State University

PUBLICATIONS

PUBLISHEDBooksTechnical papers published

Eswaran, H., B.F. Smallwood, E. Van Den Berg, P. Reich, D. Schlotausser, D. Yost, R. Rock, and P. Puglia. 1991. Global Climate Change -- Report of Activities. Internal Report, World Soil Resources, SCS.

Eswaran, H. 1991. Sustainable Agriculture in developing countries: Challenges and U.S. role. The 1991 Yearbook of Agriculture. U.S. Department of Agriculture. Washington D.C., 199-203.

Papers presented at meetings

Eswaran, H. E. Van Den Berg, and B.F. Smallwood. 1991. Soil moisture regimes of the U.S. North American Assoc. for Environmental Education. St. Paul, Minnesota. Oct. 1.

Smallwood, B.F., H. Eswaran, E. Van Den Berg. 1991. Soil Moisture and temperature regimes of N. America. ASA Meeting, Denver, CO.

Eswaran, H, N. Bliss, D. Lytle, D. Lammers. 1991. The 1:30,000,000 map of "Major soil regions of the world". ASA Meeting. Denver, CO.

Oldeman, L.R., W.M. Sombroek, B.F. Smallwood, and H. Eswaran. 1991. World map of the state of human-induced soil degradation. ASA Meeting. Denver, CO.

Cook, T.D., H. Eswaran, and E. Van Den Berg. 1991. Soil climate of Pakistan. ASA Meeting. Denver, CO.

E. Van den Berg, H. Eswaran, and B.F. Smallwood. 1991. Soil moisture, temperature and climatic severity indices in Continental U.S. ASA Meeting, Denver, CO.

H. Eswaran. 1991. Soil information for sustainable land management. The 1991 Tamahane Memorial Lecture, Indian Society of Soil Science, 56th. Annual Meeting, Dapoli, Maharashtra, India.

STAFF HIGHLIGHTS

Hari Eswaran

November 1991. Awarded the 'International Soil Science Award' by the Soil Science Society of America.

December 1991. Invited to present the R.V. Tamhane Memorial Lecture at the 56th. Annual Convention of the Indian Society of Soil Science, Dapoli, India.

January 1991. Invited to present the keynote address at the Annual Meeting of the South African Society of Soil Science, Cape Town, South Africa.

Dave Yost

November 1991. Received a letter of commendation from the National Photographic Interpretation Center for services rendered.

Ben SmallwoodLorraine JamisonPaul Reich

ANNUAL PLAN OF OPERATIONS (APO)
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FY 1992

<u>Activity</u>	<u>Person/s</u> ¹	<u>Dates</u> ²
- Lecture at IFDC on Sustainable Agriculture	H. Eswaran	10/16/91
- Participate in ASA meeting Denver, CO	H.Eswaran, B.Smallwood, E. Van Den Berg	10/27/91
- Carbon sequestration in Texas	L.W.Wilding et al	12/25/91
- Carbon sequestration in Puerto Rico	F.H.Beinroth et al	12/25/91
- Meeting at Tuskegee	B. Smallwood	03/12/91
- Carbon sequestration in New York	R.Bryant et al	12/25/91

1 First person in the list of names for each activity has major responsibility; others are active collaborators

2 Dates indicated as '09/30/92' indicate ongoing activities or where the output is expected in some future times.

- Visit India; prepare for training course; lecture H.Eswaran 12/26/92
- Attend W'shop on IRB, France H.Eswaran 01/13/92
- Planning meeting for Symposium, S. Africa H. Eswaran 30/01/92
- Sample sites in Egypt and Kenya D. Yost/T.Calhoun 05/02/92
- Longterm soil climate assessment for U.S. E. Van den Berg 10/01/92
- Sampling in Taiwan H. Eswaran 10/01/92
- Attend WNTC Meeting W.Lynn, K.Hipple 30/03/92
- Attend MWNTC Meeting H.Eswaran/P.reich 06/27/92
- Attend SNTC Meeting B.Smallwood 06/13/92
- Attend Oregon W'shop D.Yost/E.Van den Berg 06/20/92
- Complete report on US SMR/STR D.Yost, E.Van den Berg 05/07/92
- Longterm soil climate assessment for Japan. B. Smallwood 10/01/92
- Develop attribute files for 1:30m soil map E. Van den Berg 10/01/92
- Develop 1:5 million soil map of Africa H. Eswaran, N.Bliss 10/01/92
- Develop attribute files for 1:5 million soil map D. Lytle, D.Lammers 10/01/92
- MLRA map of the world D.Yost, H.Eswaran 10/01/92
- Digitize selected 1:1 million soil maps N. Bliss 10/01/92
- Develop Global Carbon data base D.Yost, H.Eswaran 10/01/92
- Develop Soils DBMS N.Bliss, 10/01/92
- Present paper at Global Change meeting, Ohio State Uni. D.Yost and H.Eswaran 10/01/92
- Develop soil climate probability evaluations, Continental US Vacant, H.Eswaran 10/01/92
- Develop soil climate probability evaluations, LDCs P. Reich 10/01/92
- Develop 'Potential Soil Degradation' map of Africa E. Van Den Berg 10/01/92
- Attend ASA meeting, Minnesota P. Reich, H.Eswaran 10/01/92
- Attend ISSS Council Meeting H.Eswaran, P. Reich 10/04/92
- Attend ISSS Council Meeting E.Van den Berg 10/01/92
- Attend ISSS Council Meeting H. Eswaran 10/01/92
- Attend ISSS Council Meeting B. Smallwood 10/01/92
- Attend ISSS Council Meeting B. Smallwood, P.Reich 11/02/92
- Attend ISSS Council Meeting H. Eswaran 11/10/92

COST SHARING (Funds provided by others; does not include SMSS funds)
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<u>Activity</u>	<u>Organisation</u>	<u>Person</u>	<u>Amount \$</u>
1. Training at ICRISAT India	OICD	H. Eswaran	3,200
2. Sampling in Egypt/Kenya	ACE	D.Yost	
		T. Calhoun	14,000
3. Visit S. Africa	OICD	H. Eswaran	2,000
	S. Africa		1,000
4. IBSRAM meeting, Nairobi	TROPSOILS	H. Eswaran	5,500
TOTAL			25,700

SMSS ACTIVITIES -- COSTS

Workplan No. (OICD): 205-1340-54011

Program Availability: \$453,943

OICD/SCS Overheads: \$112,632

Project Availability: \$341,310

<u>Object Activity</u> <u>Class</u>	<u>Date</u>	<u>Amount</u> \$ ³
2559 Salaries and Services	12/05/91	130,000
2100 Travel; Eswaran-India	12/04/91	4,600
Total		-134,600
Availability		341,310
BALANCE		206,710

³ These amounts are estimates and are modified after all costs are accounted for.