



International
Land Policy & Planning

Department of Community Sustainability
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EDUCATION:

Kandidaats Degree (B.Sc.) in
Landscape Management
Ingenieurs Degree (M.Sc.) in
Resource Management and Planning
(Business Administration minor)
Ph.D. Resource Development

Wageningen University,
the Netherlands, 1972.
Wageningen University,
the Netherlands, 1974

Michigan State University, 1980.

Areas of Professional Expertise:

Land Policy and Administration, Institutional Capacity Assessment, Economic Development Planning; Environmental / Climate Change Impact Assessment; Risk Assessment and Management; Land and Water Management; Land Use and Regional Planning; Environmental Policy; International Resource Development; Land and Regional Economics; Natural Resources and Integrated Surveys; Land Resources Classification, Remote Sensing; Geographic Information Systems; Crop Simulation Modeling and Production Forecasting; Aerial Survey Techniques; Commercial Aviation License.

Current and Recent Professional Responsibilities:

- Michigan State University
 - Professor, International Resource Development and AgBio Research, College of Agriculture and natural Resources.
 - Director and Principal Investigator Land Tenure and Administration projects (recently Mozambique, Benin, Lesotho, Ghana, Indonesia and Ethiopia)
 - Associate Director for International Programs, Land Policy Institute
 - Editor Journal of Ecology and Environmental Sciences
 - Editor International Journal of Agriculture Sciences
 - Editor Journal of Paddy and Water Environment
 - Project Director and Principal Investigator, Comprehensive Resource Inventory and Evaluation System (CRIES) Project - USAID-sponsored technical assistance for national agricultural/natural resources planning, initially cooperative with the U.S. Department of Agriculture (total accumulated USAID commitments \$6,800,000) (Project activities in the Dominican Republic, Honduras, Costa Rica, Sudan, China, Indonesia, Jamaica, Haiti, the Philippines, Kenya and Morocco).

- Co-principal Investigator, Title XII Strengthening Grant (International Development and Food Assistance Act of 1975), current AID-sponsored project support grant for University activities related to international projects - Department of Resource Development component focusing on Sustained Development Planning. (\$300,000 annually- 5 years)
 - Principal investigator Economic Development Administration project Design, Development and Application of Spatial Information Systems in EDA-assisted Economic Development Planning.
 - Co-Investigator, Center for Remote Sensing. Research, training, and technical assistance in the use of remote sensing and geographic information system techniques
 - Principal Investigator, MSU Agricultural Experiment Station Project: #1536, Systems Approaches to Resource Assessment, Planning and Management for Rural Development.
 - Core Faculty Member, Center for Advanced Study of International Development, Michigan State University. Areas: Rural Development, Land Evaluation, Resource Inventories, Remote Sensing and Applied Spatial Information Systems
- **Founding Member International Alliance for Land Tenure and Administration (IALTA).**
 - **Co-Director global program in Soil Water and nutrient Retention Technology (SWRT) to improve plant productivity, nutrient and environmental management.**
 - **External examiner Asian Institute for Technology, Bangkok.**
 - **Editorial Board Scientific Journals International - categories: Agriculture, Botany, Zoology, Food, Ecology and Environmental Sciences**
 - **Member Natural Resources Placement Panel, USAID General Agricultural Training Program (GATP) - Consortium for International Development, Arlington, VA. 22209.**
 - **Consultant to USAID, USDA, the World Bank, UN Development Program, UN Food and Agricultural Organization, International Institute for Environment and Development, and other organizations and private sector firms active in resource evaluation, impact assessment and international development.**
 - **University Committee and Advisory Assignments:**
 - Departments of Resource Development and CARRS**
 - Graduate and Undergraduate Curriculum Committees (2003-04 and 2010-current)
 - Faculty Affairs Committee (1997-2008, Chair 1999)
 - RD Faculty Search and Selection Committee, 1998 (Chair)
 - Endowment and Academic Awards Committee, (1989 - 1995, Chair 1993-95)
 - Microcomputer Teaching Lab. Committee (1991 - 95, Chair 1992-93)
 - Technology Committee (1993-1996) , College of Agricultural and Natural Resources
 - College Curriculum Committee (2000-03)
 - College Advisory Committee (1998-2000)
 - Advisory Board International Institute for Agriculture. Michigan State University (1988 - 2001)
 - College Teaching and Learning Enhancement Committee (1993-94)
 - College of Social Science**
 - Member Advisory Board of Center for Advanced Studies in International Development

- (CASID), Michigan State University (1988-89)
 - Athletic Council (1998-2000)
 - University Hearings Board (2000-2015)

Languages: English, Dutch, German, French (functional) and some Spanish

Grants and Contracts Awarded (at MSU since 1980):

- 2016 - Fulbright Foundation. Institutional collaboration and review of research and curricula in the Agricultural Sciences, Anton de Kom University, Suriname
- 2013-14 - USAID/TetraTech . \$158,000. Ethiopia Land Administration to Nurture Development (LAND)
- 2012-15 - Millennium Challenge Corporation/ USDA/FAS, \$394,900. Lesotho Impact Assessment, Phase III – Policy Impact Assessment
 - Millennium Challenge Corporation/ USDA/FAS, \$153,500 Mozambique Impact Assessment Phase II
- 2011 - Millennium Challenge Corporation/ USDA/FAS, \$179,600. Lesotho Impact Assessment, Phase II – Policy Impact Assessment
 - Millennium Challenge Corporation/ USDA/FAS, \$153,500 Mozambique Impact Assessment Phase II
 - Millennium Challenge Corporation/ USDA/FAS, \$67,100. Ghana Land Tenure and Administration
 - Seed funding Asian Study Center, Indonesia collaboration (various sources)
- 2010 - Millennium Challenge Corporation/ FAS, \$38,200. Lesotho Impact Assessment Phase I – Project Design Mission
- 2009 - Millennium Challenge Corporation/ FAS, \$399,299 Mozambique Impact Assessment Phase I
 - African Study Center. \$7,100 Nigeria Initiative.
 - Benin Land Information System Workshop, FAS \$ 42,000
 - Netherlands Organization for Scientific Research. \$ 3,000
- 2008-15 - Millennium Challenge Corporation/ FAS, \$627,452 Mozambique Impact Assessment Phase I
 - Millennium Challenge Corporation/ FAS, \$ 47,200. Benin. Access to Land Project
- 2007 - USDA Foreign Agricultural Service, \$53,499
- 2006 - USDA. Global Land Tenure and Administration, IQC – Initial allocation \$313,000
 - Development Alternatives. Prosperity, Livelihoods and Conserving Ecosystems (PLACE) IQC, \$367,958
- 2004-05 - Michigan Department of Natural Resources, Integration of Natural Resource Information in Land Use Planning (approx. \$10,000)
- 2003-04 - Japan Society of Science. Collaboration Grant with Kyoto University and the Tokyo University of Agriculture (cost reimbursement)
- 2002-03 - Fulbright Foundation. Grant to establish an Environmental Protection Center at Ubonratchathani University, Thailand (cost reimbursement)
 - ISP/MSU – international program development grants.
- 2001 - RAISE/Philippines EcoGovernance project (USAID). \$190,000 (with Clay et al.)
- 1997 - MEYER CORP. Program support grant for “Environmental Planning and Management”, European overseas study program. \$30,000

- 1996** - National Institute of Health, Fogarty International Center. Training and Research in Environmental Health: The Balkans (with Petropoulos et al.). \$776,308 through 2001
- 1995** - MSU-AES. Development of Methods and Guidelines for Local Wetland Protection and Land Use Planning. \$180,000 through 2000
- 1993.** - U.S. Economic Development Administration. Phase II - Design, Development and Application of Spatial Information Systems in EDA-assisted Economic Development Planning. Incremental \$ 127,000 Grant Allocation.
- 1992** - Intergraph Corporation. Co-recipient (with Enslin et al.) multi-departmental information system grant - hard and software support - \$ 550,000.
- 1991.** - U.S. Economic Development Administration. Design, Development and Application of Spatial Information Systems in EDA-assisted Economic Development Planning. Initial \$128,000 Grant Allocation.
- 1990.** - United Nations Development Program. Travel Grant for Chinese Lecture Series. University of Hawaii, East-West Center. Research Grant.
- 1988.** - State of Michigan, Department of Management and Budget, Radioactive Waste Authority. Development and Implementation of a State-wide Area Screening Methodology for the Site Selection for Disposal of Low-level Radioactive Waste. \$347,770.
- 1987.** - USAID-Haiti. Incremental project funding for implementation of the CRIES project and related training in Haiti under auspices of the Agricultural Development Support II project, USAID in collaboration with the University of Arkansas and Winrock International, project extension of \$ 141,000 commitment USAID
- Title XII. Project support and development grant, project support for sustainable development, \$ 20,000
- 1986.** - USAID - Haiti. Incremental project funding for implementation of the CRIES project and related training in Haiti under auspices of the Agricultural Development Support II project, USAID in collaboration with the University of Arkansas and Winrock International , \$69,000.
- Title XII. Staff training support, \$ 25,000.
- USDA-OICD. CRIES software and data base support Kenya, \$12,000
- FAO - Mozambique, CRIES software and data base development support, \$4,000
- 1985.** - USAID -Dominican Republic. Additional funding for the Natural Resources Management Project, increased project funding for Graduate Research \$ 47,000.
- USAID-Haiti. Initiation CRIES technical assistance project as part of Agricultural Development Support Program, \$ 72,000.
- Title XII. Staff training support, \$26,000.
- Michigan Department of Public Health. Data base and Site Evaluation Grant for Radio-active Disposal Siting Analysis, \$23,500.
- USAID-Philippines. Project internships via Winrock International, \$ 12,000.
USAID - Jamaica. Remote Sensing Training Grant for National Land Cover/Use updating and related training, \$ 46,000.
- 1984.** - USAID-Jamaica. Second Phase Resource Assessment Project, \$124,500 (partial funding). Title XII. Staff training support,
- USAID - Dominican Republic, Extension NARMA project (initiated 1982), \$ 290,000.
- World Bank - Government of Jamaica. Allocation to support second phase National Resource Assessment project, \$100,000.
- 1983.** - USAID-Jamaica. Second Phase Resource Assessment Project, \$177,000 (partial funding)

- USAID-Jamaica. Training Seminar at MSU, \$22,000.
- USAID-Dominican Republic. Training Seminar at MSU, \$62,000.
- Title XII. Staff training support, \$35,000.
- 1982.** - USAID-Dominican Republic. Natural Resources Management Project 1982-1986, \$655,000.
- USAID-Honduras. Resource Assessment Choluteca Department, \$144,000.
- Title XII. Staff training and salary support, \$12,000.
- Food and Agricultural Organization, Land and Water Development Division, \$ 8,000 (partial funding Kenya Project)
- 1981.** - USAID-Jamaica. Phase I Jamaica Resource Assessment, \$220,000.
- Michigan Bean Commission, Agricultural Crop Surveys, \$ 10,000
- Cooperative Extension Service. Remote Sensing Applications in Agriculture, \$12,000.
- Title XII. Staff Support, \$10,000.
- 1980.** - Combined commitments Research Agreement OICD/USDA to support Foreign Development Assistance, approximately \$180,000.

Personal Information:

Citizenship: USA
Birth place: Netherlands

LANGUAGES: English, Dutch, German, French, (some Spanish)

- AWARDS:**
- Japan Science Society – Senior Visiting Research Scholar, 2003-04
 - Fulbright Foundation – Senior Research Advisor, Surinam, 2016 and Thailand, 2001-02
 - FAO – Rome, Visiting Senior Expert, 1997
 - UNDP-STAR Award, Peoples Republic of China, 1990
 - East-West Center, Hawaii, Research Fellow, 1990.
 - Rotary International Fellowship, 1974.

PROFESSIONAL ORGANIZATIONS:

Association for International Agriculture and Rural Development
American Society of Photogrammetry and Remote Sensing,
American Water Resources Association,
American Society of Planning Officials,
International Impact Assessment Association,
Society for International Development
Soil Conservation Society of America,
Urban and Regional Information System Association,
International Pilots Association.

PAST PROFESSIONAL EXPERIENCE:

1989-1995: Associate Professor, Department of Resource Development, Michigan State University. Director, Comprehensive Resource Inventory and Evaluation System (CRIES) project (1980-95). Project international development objectives and activities: Agricultural Sector Analysis, Integrated Rural Development, Policy Analysis and Evaluation, Natural Resource Assessment and

Management.

Administrative activities:

- a) **Coordination of international development projects in collaboration with various academic institutions, US federal agencies (USAID, USDA, etc) and international development institutions (UNDP, FAO, World Bank) and personnel associated with the CRIES project,**
- b) **Provide technical leadership in certain functional areas related to resource inventory and land evaluation, and**
- c) **provide departmental oversight and reporting activities relating to the international cooperative agreements, grants and contracts.**

1983-1989: Assistant Professor, Department of Resource Development, Michigan State University. Director and Principal Investigator of the CRIES project, Principal Investigator of the Title XII program, Co - Investigator, MSU Center for Remote Sensing.

1981-1983: Visiting-Assistant Professor, Department of Resource Development, Michigan State University. CRIES project director, Principal Investigator of the Title XII program, Co -Investigator Center for Remote Sensing.

1980-1981: Research Associate and University Director of the CRIES project, Michigan State University. (MSU/USDA).

1975-1980: Project Manager and Research Assistant, NASA Remote Sensing Project, Michigan State University

1973-1974: Regional Planner, Advies Bureau Arnhem B.V., Arnhem, The Netherlands. Applied research in urban and regional planning. Design of new towns and infrastructural development. Research in simulation modeling of location analysis techniques in an international research group consisting of the Dutch National Planning Agency, Advies Bureau Arnhem B.V. and Collin Buchanan and Partners, London.

1973: Regional Planner for International Development Consultants, The Netherlands. Design for urban and regional development projects (Mediterranean area and Indonesia). Environmental surveys/integrated surveys.

1967-1968: Military Service

Publications:

Medendorp J., G.Schultink, J. Bonnell, M. Woube, A. Dagnew and R. Pitoro. 2015. Ethiopian Land Administration Proefesional; Educational Demand Assessment, and Basic Curricula and Institutional capacity Review. MSU. USAID and Tetra Tech. 380 p.

Pitoro, R., Songqing Jin, G.Schultink and E. Payongaqong. (Working Draft) 2015. Baseline Report for the Land Adminstartion Interventions in Districts and Municipalitiwes in Northern Mozambique under MCA-Mozambique's Land Tenure Services Project. 41 p.

Rie Muraoka, Mywish K. Maredia, Songqing Jin and Gerhardus Schultink. 2014. Are there gender differences in the perceived impact of land security? Evidence from Urban Lesotho. Presentation at the World Bank and Land and Poverty Conference, 'Integrating Land Governance into the Post-2015 Agenda: Harnessing Synergies for Implementation and Monitoring Impact, Washington DC,

Raul Pitoro, Songqing Jin, Mywish Maredia, and Gerhardus Schultink. 2014. The State of Current Land Rights and the Demand for Future Land Rights in Rural and Urban Mozambique: Evidence from two Baseline Surveys. Presentation at the Annual World Bank Conference on Land and Poverty, Washington DC, March 24-27, 2014

Pitoro, R., Songqing Jin, G. Schultink, Ellen Payongayong and Mywish Maredia, and G. 2014. Evaluation of the Impact of Investment in the Land Administration and Cartography Training Institute (INFATEC) under MCA-Mozambique's Land Tenure Services Project. Project Report, MSU.MSU. 18p.

Schultink, G. 2013 Risk Characterization and Quantification: An Operational Perspective on Concepts, Needs and Opportunities for the Developing World. Planet @ Risk Journal. Vol. 1, No 1

Maredia, M, R. Pitoro, S. Jin, E. Payongayong and G. Schultink, 2013. Impact Evaluation of the Policy Monitoring and capacity Building Activities of the Land Tenure Services Project in Mozambique: Baseline Report Based on TIA 2008 Survey Data. Project Report, MSU

Schultink, G. 2012. Comparative Land Governance and Use Rights: A Perspective on Advancing Economic Development, Land Use Planning, Natural Resource Management and Indonesian Land Law Reform. Proceedings International Symposium on Regulatory Reform of the Indonesian Land Law for Prosperity of People, University of Indonesia, December 11, 2012. Jakarta

Arifin, H.S., A. Munander. G. Schultink and R.L. Kaswanto. 2012. The role and impacts of small-scale, homestead agro-forestry systems ("pekarangan") on household prosperity: an analysis of agro-ecological zones of Java, Indonesia. International Journal of AgriScience, Oct. 2012, 2 (10), pp. 896-914

Mywish K. Maredia, Raul Pitoro, Songqing Jin, Ellen Payongayong and Gerhardus Schultink. 2012. Impact Evaluation of Site-specific Activities under the Land Tenure Services Project: Report of the Baseline Survey Conducted in Two Urban Areas in Northern Mozambique. Project Report, MSU.

Schultink, G. and A. Safik. 2010. Land Policies, Strategies And Guidelines To Strengthen Indonesian Agrarian Reform. World Bank Report. National Land Agency, Republic of Indonesia. 246 p.

Schultink, G. 2010. Concepts, Principles and Guidelines for Land Policy Formulation and Development Planning. Spatial Planning and Land Policy Bulletin, Indonesian Ministry of Planning. Oct. 2010

Schultink, G. 2010. Land Use Planning and Open Space Preservation: Economic Impacts of Low-Density Urbanization and Urban Sprawl. Journal of Civil, Environmental and Architectural

Engineering. Vol. 3. Issue 1, 2010. 23 p.

Smucker A., G.Schultink and Kurt Thelen. 2009. SWRT Enhancement of Water Use Efficiency and Economics of Irrigated Low Water Holding Capacity Sandy Sandy Soils. Proceedings American Soil Association. Nov. 2009. Pittsburg, PA

Smucker A., G, Schultink and B. Basso. 2009. Expanding Agroforestry Production using Subsurface Water Retention Technology in Arid and Semi-Arid Regions. Presented at the 2nd World Congress of Agroforestry, Nairobi, August 2009.

Schultink, G. 2009. Growth Management in Florida – Planning for Paradise (Review). Journal of the American Planning Association, Volume 75, Issue 3 June 2009

Rozdilsky, J. L. and G. Schultink, 2008. Migration as a Coping Strategy for Environmental Hazard Mitigation on Small Islands: Environmental Risk Modeling of Montserrat’s Volcanic Eruptions, Proceedings UN International Conference “Environment, Forced Migration and Social Vulnerability”, October 9-11, 2008. Bonn.

Schultink, G. 2008. Amazon Rainforest Continues to Shrink Faster, Land Policy Institute.

Schultink, G., I. Saizen, and L. Szymecko, 2007. The Economic Impact of Farmland Loss: Implications of Low Density Urbanization and Sprawl. Land Policy Institute Report # 2007-07. 32p.

Olson, J.A., J.J. Paskus and G. Schultink, 2007. Public Preferences on the Integration of Natural Resources Information in Land Use Planning & Zoning: A Survey of Local and Regional Planning Officials. Land Policy Institute Report # 2007-04. 44p.

Schultink, G. 2006. Sustainable Land Use and Urban Growth Management: Demand-Supply Factors and Strategic Planning Considerations. Journal of Agriculture, Food and Environmental Sciences. Vol. 1, Issue 1, 16 p.

Olson, J.A., J.J. Paskus and G. Schultink. 2006. Integration of Natural Resources Data in Local Land Use Planning – A preliminary Report. Michigan Natural Features Inventory Program and MSU Land Policy Institute.

Schultink, G. 2005. A European Perspective on Land Use Planning and Growth Management: The Netherlands. Planning and Zoning News. Vol. 23. No.10. Planning and Zoning Center. Lansing, MI. 48906. pp 5-8

Schultink, G., A. Memon and M. Thomas. 2005. Land Use Planning and Growth Management: Comparative Policy Perspectives on Open Space Preservation. MSU- Agricultural Experiment Station Project Research Report # 587, 84p.

Schultink, G., 2002. Urban Growth Management and Quality of Life Impacts: Balancing Demand and Supply Factors within a Sustainable Land Use Planning Framework. Proceedings ISOMUL 2002 – 4th International Workshop on Sustainable Land Use Planning. Bellingham, WA, June 20-22. 2002.

Wolfson, L., Mokma, D., Schultink, G., Dersch, E. 2002. Development and Use of a Wetlands Information System for assessing Wetland Functions. In: Lakes & Reservoirs: Research and Management. Vol 7-3, pp: 207-216.

Schultink, G., 2001. Implications for Risk Communication, International Conflict Resolution and National Security. in: Responding to Environmental Conflicts: Implications for Theory and Practice. NATO Science Series 2 - Environmental Security - Vol. 78. pp. 95-111. Kluwer Academic Publishers, the Netherlands.

Schultink, G., 2001. Quality of Life and Environmental Policy: Implications for Indicator Selection and Global Resource Restoration. Proceedings Third International Congress on Environmental Indices and Indicators: System Analysis Approach. Rome, Italy. October, 2001.

Wolfson, L., D. Mokma, G. Schultink and E. Dersch. 2001. Development and Use of a Wetlands Information System for Assessing Wetland Functions. Proceedings of the Shiga-Michigan Joint Symposium toward Sustainable Management of Lake-Watershed Ecosystems, Hikone, Shiga, Japan pp S1-S4.

Mokma, D., G. Schultink, E. Dersch and L. Wolfson. 2000. Methods and Guidelines for Local Wetland Protection and Related Land Use Planning. MSU-AES Special Report 106. Michigan State University. 16p.

Schultink, G. et al. 2000. Guidelines for Wetland Identification and Evaluation: Needs and Opportunities for Local Protection. MSU- Agricultural Experiment Station Project Research Report # 572, 82p.

Schultink, G., 2000. Critical Environmental Indicators: Performance Indices and Assessment Models for Sustainable Rural Development Planning. Ecological Modelling 130 (2000) pp 47-58

Schultink, G., 1999. Comparative Environmental Policy and Risk Assessment: Implications for Risk Communication and International Conflict Resolution. Paper presented at the NATO Advanced Research Workshop on "Responding to Environmental conflicts: Implications for Theory and Practice", Jan. 21-23, Budapest.

G. Schultink. 1999. Environmental Indices and Public Policy: A Systems Perspective on Impact Assessment and Development Planning, Chapter 35 Environmental Indices, Systems Analysis Approach, Edited by Pykh, Hyatt and Lenz, EOLSS Publishers, Oxford, UK.

G. Schultink. 1998. Critical Environmental Indicators: Performance Indices and Assessment Models for Sustainable Rural Development Planning. Paper presented at the Second International Workshop on Environmental Indicators and Indices. July 10-14, 1998. Austria.

G. Schultink and R. van Vliet. 1997. Wetland Identification and Protection: North American and European Policy Perspectives. MSU- Agricultural Experiment Station Project Research Report # 554, 51p.

G. Schultink. 1997. Environmental Indices and Public Policy: A Systems Perspective on Impact Assessment and Development Planning, Paper presented at the First International Conference on

Environmental Indices: Systems Analysis Approach, July 7-11, 1997. St. Petersburg, Russia.

Winoto, J and G. Schultink, 1996. Impacts of Urbanization on Agricultural Sustainability and Rural Life in West Java, Indonesia. MAES Research Report #545, 54 p

Roberts, K, Anderson, D and G. Schultink, 1993. Innovative Uses of Data for Economic Development Planning. Paper presented at the 1993 MSU Extension Fall Conference, October 18 - 20, Kellogg Center. East Lansing.

Schultink, G. 1993. "Environmental Policy and Planning: Contemporary European Perspectives", Paper presented at the Michigan Conference of Political Scientists, Alma College, Alma Mi. October 28-29, 1993.

Schultink, G. K. Roberts et al., 1993. Regional Profiles and Indicators for Economic Development Planning in Michigan. MSU/USDC-EDA. 949 p.

Clark, J. J. Sorensen and G. Schultink. 1993. Integrated Coastal Zone Management Strategy. Bangladesh Coastal Area Resource Management Identification and Formulation Mission Project Report, . UNDP/Bangladesh. 63 p

Schultink, G. and Karen Roberts. 1992. Regional Economic Development Needs and Opportunities: Practitioners and Research Perspectives. Paper presented at the EDA Regional Conference, Milwaukee, Oct. 22-24, 1992.

Schultink et al., 1992. Information Needs Assessment for Economic Development Planning and Evaluation - A Survey Report of Michigan Planning and Development Regions. EDA Project Report. Department of Resource Development, MSU. 70 p.

Phillips, M. and G. Schultink, 1992. Description and Recommendations on the Content and Structure of Michigan Overall Economic Development Programs. EDA Project Report. Department of Resource Development, MSU. 89 p. plus Appendices.

Schultink, G., 1992. US Department of Commerce, Economic Development Administration, Focus Group: Summary Findings. 6p.

Schultink, G., 1992. Integrated Remote Sensing, Spatial Information Systems and Applied Models in Resource Assessment, Economic Development and Policy Analysis. Journal of Photogrammetry and Remote Sensing. Vol. 58, No.8, pp 1229-1237.

Schultink, G., 1992. Evaluation of Sustainable Development Alternatives: Relevant Concepts, Resource Assessment Approaches and Comparative Suitability Indicators. International Journal of Environmental Studies. Vol.41, pp 203-224.

Schultink, G., 1990. Quantitative Land Evaluation for Rural Development Planning: Concepts, Approaches and Applied Systems. Lecture Series, Chinese Translation. Chinese Academy of Agriculture, Beijing, China. 85 p.

Schultink, G. 1990. Estimation of Comparative Area Indices of Tourist-based Economic

Development Potential: A Spatial-Analytical Perspective of Community and Regional Development Opportunities. Paper presented at the Symposium on "Predicting Community Character, Tourism and Economic Development. 18 p. April 29-30, Kellogg Biological Station Conference Center, Michigan State University.

Schultink, G. 1989. **Natural Resource Management for Sustainable Development. Proceedings Sustainable International Development Workshop.** September 10 - 15, 1989 (Edens et al. Ed.) MSU, Department of Resource Development and Institute for International Agriculture. pp. 20 -21

Schultink, G. et al. 1989. **Final Report - Design and Implementation of a State-wide Screening Method to Determine the Comparative Area Suitabilities for Near-Surface Isolation of Low-level Radioactive Waste - Part A - Implementation of Exclusionary Variables to Determine Potentially Suitable areas for Radioactive Waste Isolation in Michigan.** Michigan State University. 57 p.

Schultink G. et al. 1989. **Design and Implementation of a State-wide Screening Method to Determine the Comparative Area Suitabilities for Near-Surface Isolation of Low-level Radioactive Waste - Interim Report - Proposed Operational Variables for Area Identification.** Michigan State University. 33 p.

Schultink, G. 1989. **Hazardous Waste and the Radioactive Waste Disposal Challenge: The Seven-state Midwest Compact Case. Proceedings of the International Geographic Information System Symposium, CERMA/AAG, Baltimore, March 18 - 20. 14p.**

Schultink, G., S. Nair, W. Enslin, Brian Buckley, Jihan Chen, Doug Brown Sei-Wang Chen and Bradley Parks. 1989. **User's Guide to the CRIES Geographic Information System, Version 6.2.** CRIES, RDOP-CRIES-89-2, Michigan State University.

Schultink, G. 1988. **"Low-level Radwaste Siting Analysis: State-Wide Screening for Area Suitability",** Michigan Low-Level Radioactive Waste Authority. 20 p.

Schultink, G., and N. C. Amaral. 1987. **Assessment of Agro-ecosystem Production Potential in Developing Countries: The CRIES-Agro-Economic Information System - YIELD Model. Soil Survey and Land Evaluation, Volume 7, Number 3. pp 187 - 197**

Schultink, G and Eric Schwing, 1987. **"Radioactive Waste Repository Analysis: Micro Computer-based Land Evaluation of the North Central Region",** Impact Assessment, Volume 5, 4 pp. 33 - 54.

Schultink, G., 1987. **"Quantitative Land Evaluation of Land Utilization Types and Farming Systems: The CRIES Project Systems Approach to Integrated Rural Development Planning.** Paper presented during the Farming Systems Research Symposium, University of Arkansas, Fayetteville, Arkansas. October 18 - 22, 1987. 28 pp.

Schultink, G., 1987. **"Assessment of Agro-ecosystem Production Potential in Semi-Arid Regions under Rainfed and Alternative Irrigation Scenarios: The CRIES - YIELD Model".** Proceedings of the International Symposium on Dryland Farming. Volume I, pp 13 - 40. North Western Agricultural University, Yangling, Shaanxi, China. September 18 - 22.

Schultink, G., 1987 "The CRIES Geographic Information System: An Appropriate Technology Interface between Thematic Cartography and Quantitative Land Evaluation for Development Planning". Proceedings of the Willi Nordberg Symposium. Remote Sensing: Towards Cartographic Application. Technical University Graz, Austria. September 7 - 9, 1987 and Proceedings of the Geographic Information System 1987 Symposium, San Francisco, October 24 - 28, 1987. 22 pp.

Schultink, G., 1987 "The CRIES Resource Information System: Computer- aided Spatial Analysis of Resource Development Potential and Development Policy Alternatives", Soil Survey and Land Evaluation Volume 7. No. 1 pp. 47 - 62.

Schultink, G., N. Amaral and D. Mokma. 1987 " User Guide to the CRIES-Agro-economic Information System - YIELD Model", Version 1.0. CRIES, RDOP-CRIES-87-1, Michigan State University.

Schultink, G., B. Buckley, D. Brown, S. Nair, W. Enslin, Sei-Wang Chen. 1987. User's Guide to the CRIES Geographic Information System, Version 6.1. CRIES, RDOP-CRIES-87-2, Michigan State University.

Schultink, G., 1986. "The CRIES Resource Information System: Computer-aided Spatial Analysis of Resource Development Potential and Development Policy Alternatives", in Quantified Land Evaluation Procedures, ITC Publication # 6, Beek, K.J.et al. (Ed.) Proceedings of the International Workshop on Quantified Land Evaluation Procedures, Washington, DC, April 27-May 2, 1986. International Institute for Aerospace Survey and Earth Sciences (ITC), Enschede, The Netherlands.

Schultink, G., 1986. "Micro Computer-based Geographic Information Assessment Technology for Resource Assessment and Rural Development Planning", Geocarto International, Volume 2, pp. 33 - 43.

Schultink, G., 1986. "The CRIES Geographic Information System: Micro Computer-based Land Evaluation Software for Resource Management and Land Use Planning", Proceedings from Selected Educational Sessions of the 1986 ASLA Meeting: Landscape/Land Use Planning. Annual Meeting of the American Association of Landscape Architects, Selected Educational Sessions, November 23-25. San Francisco. pp. 52-65.

Schultink, G., 1986. "The CRIES Resource Information System: Computer-aided Spatial Analysis of Resource Development Potential and Development Policy Alternatives", Proceedings of the 7th International Symposium on Remote Sensing for Resource Development and Environmental Management, August 25-29, 1986, Enschede, the Netherlands.

Schultink, G., A. Zusmanis, B. Buckley, D. Brown, S. Nair and Sei- Wang Chen, 1986 User's Guide to the CRIES Geographic Information System, Version 6.0. CRIES, RDOP-CRIES-86-1 Michigan State University.

Schultink, G., and A. Zusmanis, 1985. "The CRIES Geographic Information System: Micro Computer-based Resource Analysis Modules for Development Planning, Proceedings of the CERMA International Conference Series on the Integration of Remotely Sensed Data in Geographic Information Systems for Processing of Global Resource Information, Washington D.C.

May 29 - 31, 1985. p. 11-11 to 26.

Witter, S.G., A. Hernandez, D.Mendez and G. Schultink. 1985. "Effects of Land Use Change Over Time On Hillside Erosion in the Ocoa Watershed, Paper presented during the First International Conference on Land and Water Conservation, Santo Domingo, Dominican Republic, December 3 - 6, 12 pp.

Schultink, G., A. Zusmanis, Bryan Buckley and Chris Henshaw, 1985. User's Guide to the CRIES Geographic Information System, Version 5.0 for MSDOS Micro Computers, CRIES, Michigan State University.

Schultink G., 1985. Computer-aided Resource Assessment and Management: Recommended Concepts, Approaches and Techniques for Integrated Resource Management, Policy Analysis and Formulation", Proceedings of the International Conference on Advanced Technology for Monitoring and Processing Global Environmental Data, London, September 9 -12, 1985. p. 541 - 553.

Schultink, G., 1984. "The Role of Micro Computers in Integrated Resource Analysis for Rural Development Planning", Paper presented during the Workshop for Micro-Computer Applications in Agricultural Research, conducted at the International Rice Research Institute (IRRI), Los Banos, the Philippines, September 24 - 27, 1984. 8 pp.

Schultink, G., A. Zusmanis and M.Birze, Users Manual for the CRIES Geographic Information System, Version 4.1 for Radio Shack Models 16 and II, CRIES Project Paper, Michigan State University, East Lansing, 1984.

Mokma,D., S.G. Witter, and G. Schultink, 1984. "Applied Remote Sensing and Geographic Information System Techniques for the Assessment of Agricultural Production Potential: A Honduran Case Study" Proceedings of the Eighth International Symposium on Machine Processing of Remotely Sensed Data, Purdue University/LARS, June 11- 15, 1984,

Schultink, G., S.G.Witter, and D. Mokma, 1984. Honduras Natural Resource Assessment: Department of Choluteca, CRIES Project Report, Michigan State University, 1984, 235 p.

Schultink, G., Proceedings 1983 National Conference on Resource Management Applications: Energy and Environment. Earth Resource Management, An International Perspective. Vol.I. Proceedings of a Working Group Meeting, San Francisco, Cal. August 22-26,1983. pp. 23- 42.

Schultink, G. 1983. Integrated Remote Sensing and Information Management Procedures for Agricultural Production Potential Assessment and Resource Policy Design in Developing Countries. Canadian Journal of Remote Sensing. Vol. 9, No. 1, pp. 4-18.

Schultink, G. Integrated Remote Sensing and Information Management Procedures for Agricultural Production Potential Assessment and Resource Policy Design in Developing Countries. Invited paper presented during the Third Asian Conference on Remote Sensing, December 4-7, 1982, Dhaka, Bangladesh. 19 pp.

Schultink, G. et al. 1982. Jamaica Resource Assessment. CRIES Project Report prepared for

USAID. 250 pp. 1982.

Schultink, G., Lodwick, W.A., and Johnson, L.B, 1981. "Application of Remote Sensing and Geographic Information System Techniques to Evaluate Agricultural Production Potential in Developing Countries." Proceedings Seventh International Symposium on Machine Processing of Remotely Sensed Data, Purdue University/LARS, June 22-26, 1981.

Schultink, G. and Karteris, M.A. 1981. An Evaluation of Photographic Imagery Parameters Relating to Agricultural Inventories in the Dominican Republic. CRIES Working Series Report, MSU, East Lansing, MI. 48824

Johnson, J.B., Putman, J.W. and Schultink, G. 1981. The Relationship between the Area-Frame and CRIES Projects. Natural Resource Economics Division, E.S.S., USDA and Dept. of Resource Development Staff Report No. AG ESS 810720, MSU.

Schultink, G. and Karteris, M.A., 1981. An Evaluation of Light Aircraft Remote Sensing Techniques for the Detection and Quantification of Cane Rust. CRIES Working Series Report, East Lansing, Michigan.

_____, 1981 "Resource Inventory Procedures in the Dominican Republic Using Linear Random Sample Data Acquired by Light Aircraft Survey Techniques." Proceedings of the 14th International Symposium on Remote Sensing of the Environment, pp. 1455-1468. San Jose, Costa Rica.

Karteris, M.A., Schultink, G, Safir, G.R., and Hill-Rowley, R., 1980. An Evaluation of 70mm Color Infrared Photography for Sugar Cane Rust Assessment in the Dominican Republic: Proceeding of the 14th International Symposium on Remote Sensing of the Environment. pp. 1631-1642. San Jose, Costa Rica.

Schultink, G., 1980. Statistical Sampling of Agricultural and Natural Resource Data: A Comparison of Aerial Sampling and Area- Frame Sampling Techniques with special Reference to Lesser Developed Countries. Ph.D. Dissertation, Department of Resource Development, Michigan State University.

Witter, S.G., Schultink, G. and Lusch, D.P., 1980. Land Cover/Use Inventory for the Dominican Republic through Visual Interpretation of Landsat Imagery. CRIES Working Series Report, East Lansing, Michigan.

Schultink, G., Karteris, M.A., and Hill-Rowley, R., 1979. "Cane Rust Damage Assessment in the Dominican Republic: The Use of Light Aircraft-Small Format Photography in Small Area Agriculture Inventories." Proceedings of the 3rd Conference on the Economics of Remote Sensing. Incline Village, Nevada.

Enslin, William R. and Schultink, G. 1978. Cane Rust Evaluation Using Light Aircraft Remote Sensing Techniques. NASA/MSU Remote Sensing Project, mimeograph.

Schultink, G. 1978. "The Application of Remote Sensing Techniques for the Enforcement of the Michigan Sand Dune Management and Protection Act," Proceedings of the American Society of

Photogrammetry Fall Technical Meeting, , American Society of Photogrammetry, Albuquerque, New Mexico, pp. 468-479.

Schultink, G. 1978. Monitoring and Inventory Procedures for Sand Dune Mining Operations in Michigan: A Sand Mining Surveillance Manual Using Remote Sensing Techniques. Remote Sensing Project, Michigan State University, East Lansing, Michigan.

Buckler, William R. and Schultink, G. 1978. The Use of Remote Sensing in the Protection and Management of Great Lakes Shore Zone Sand Dunes. Paper presented at the Fall Technical Meeting of Great Lakes Chapter, American Society of Photogrammetry, Ann Arbor, Michigan, September 22, 1978.

Schultink, G. 1978. Light Aircraft Remote Sensing Using Small Format Cameras. NASA/MSU Remote Sensing Project, mimeographed.

Schultink, G. 1978. Recommendations for Sand Mining Inventory and Monitoring Procedures. Report submitted to the Geological Survey Division of the Michigan Department of Natural Resources. NASA/MSU Remote Sensing Project.

Schultink, G. 1977. Sand Mining Inventory Procedures for the Muskegon Area. Case study involving the evaluation of remote sensing techniques for the monitoring of sand mining operations. NASA/MSU Remote Sensing Project, mimeographed.

Schultink, G. 1977. The Impact of Off-Road-Vehicle Use on the Grand Mere Dune Environment. NASA/MSU Remote Sensing Project, Proceedings of Sixth Biennial Workshop on Color Photography, Fort Collins, Colorado.

Salleh, Mohd. Nor, Safir, G., Burton, T.M., Hook, J.E. and Schultink, G. 1977. Proceedings of the 11th International Symposium of Remote Sensing of the Environment, Ann Arbor, Michigan.

Schultink, G. 1973. A Simulation Model Approach for the Allocation of Land Use Development. Thesis, Agricultural University of Wageningen, The Netherlands.

Courses Developed and Taught

ESA 320 – Environmental Management and Planning

Use and management of natural resources. Review of concepts, principles, and objectives of resource management and planning. Concepts of human population dynamics, resource supply and demand, environmental impacts and suitability assessment for sustainable development. This course provides a comprehensive review of our natural resources, their uses and impacts. Human population dynamics, land use trends and associated impacts are discussed. Natural resource systems (e.g., energy, water, minerals, soils, air, agriculture, forests, fisheries and wildlife) are evaluated. Selected uses are examined to identify sustainable resource management and planning practices. Public policy issues are explored.

ESA 415. Environmental Impact Assessment. (On-line since 2013)

Environmental Impact Assessment (EIA) is the process of identifying, predicting, evaluating, and managing the biophysical, social, economic, and other relevant effects of proposed projects, policies, or programs. This process takes place before major investments decisions are made and project execution is initiated. EIA theory and practice involves a systematic, interdisciplinary approach to environmental analysis, including the quantitative and qualitative evaluation of environmental impacts and risks, along with economic, social, and technical considerations.

This course allows students to learn about “best practice” in EIA. Topics include: the NEPA process; the steps in the EIA process; impact prediction and assessment methodologies; cumulative effects analysis; multi-criteria analysis; risk assessment; EIA monitoring; and public participation in EIA.

RD 425. Resource Information Systems.

Introduction to Spatial Information Systems, including integrated resource data base development, file manipulation, computer-aided site analysis, environmental impact and resource assessment studies. Includes laboratory on the use of Geographic Information Systems, introduction and review of generic spatial information system functions, review of applied environmental impact assessment models within the context of selected case studies.

RD 490. Environmental Planning and Management in Europe

This overseas study program includes study visits to leading university centers, national and regional government agencies, international organizations such as the International Court of Justice and UNESCO, economic development and resource management authorities, and the European Community Organization. The course addresses key environmental issues, the role of land use planning and public policy formulation and a review of selected project and case studies, including land reclamation, land consolidation, water management, environmental modeling and engineering. In particular, the effectiveness of the public and private sector in guiding international, national and regional development in industrialized, market economies of an integrating Europe is examined.

RD 491/891. Environmental Science and Policy in New Zealand

This study abroad program includes study visits to leading universities, government agencies, and resource management authorities, including the U.S. Antarctic Program in Christchurch. The program addresses key environmental issues and concerns, the role of resource planning, management and public policy formulation, and review selected projects, including resource and ecosystem preservation and restoration, water and land management, and land use planning. It explores relevant aspects of environmental policy and practice through interaction with environmental professionals at selected academic institutions and with practitioners in the field.

ESA 480. Environmental and Land Use Studies in Israel

This program, conducted in collaboration with the Arava Institute for Environmental Studies (AIES), introduces students to the unique ecological aspects of desert environments and their varied natural resources, and provides an understanding of the environmental and development

challenges that are associated with land use and settlement impacts in arid regions. It is divided into a number of integrating themes, including sustainable agriculture and development, history of human settlement and land use impacts, desert ecology, bio-diversity and land use, water management and irrigation impacts in dryland regions, marine/coastal ecosystems, bio-diversity and aquaculture, regional impacts of tourism development, and environmental preservation and conservation tools and objectives

RD 825. Sustainable Development Planning. (ACR 830 On-line since 2013)

Key concepts, approaches and techniques in resource analysis and planning are discussed within a local, regional, national and international framework. Students conduct applied computer-aided analysis using resource analysis laboratory equipment in the Department of Resource Development. Topics covered in the lecture portion of the course include: (1) formulation of development objectives and information requirements, (2) resource assessment and land evaluation theory, (3) integrated surveys for development planning, (4) natural resource production potential assessment, (5) resource inventory techniques, (6) remote sensing for resource assessment, (7) computerized data base development, (8) geographic information systems, (9) computer-aided suitability assessment, and (10) socio-economic aspects of feasibility analysis. Throughout the course examples are introduced concentrating on resource analysis applications at various levels of detail. The course deals explicitly with international rural development concerns in developing nations and group case study analysis.

Invited Lectures, Seminars, Workshops or Presentations:

Global Warming, Evidence, Trends and Implications for Action. Guest Seminar, Anton de Kom University of Suriname (AdeKUS), Paramaribo, Suriname., October 12, 2016.

Risk Characterization and Quantification: An Operational Perspective on Concepts, Needs and Opportunities for the Developing World. Global Risk Forum, Davos, Switzerland, Nov. 19, 2013

Green Development and Ecotourism with Community Participation. Guest Lecture, Post Graduate Course in Community Development, Cordova University, Sumbawa, Indonesia. June 22, 2013

Green Community Economic Development Strategies: Asset-based Natural Resource Development for Lesser-developed Areas in Indonesia. Workshop Presentation, UDAYANA University, Bali, Indonesia. June 21, 2013.

Establishing an International Tropical Agricultural Program, Bogor Agricultural University Workshop, December 14, 2012. Bogor, Indonesia.

Global Warming: Facts, Trends and Implications for Action, Studium Generale Lecture, Faculty of Agriculture, Bogor Agricultural University, Dec. 12, 2012. Bogor, Indonesia.

Word Bank Conference on Land Policy and Administration. Washington D.C. Use of Information Systems and Data Structures for Effective Land Use Planning, April 26, 2012.

Studium Generale Lecture, Bogor Agricultural University. Research on Land Policy, Strategies and Practices for Rural Economic Development Planning: Indonesian Needs and Opportunities. Febr. 22, 2011

Seminar, National Land Agency (BPN), Government of Indonesia. Potential Roles of BPN in Land Policy and Strategies for Agrarian Reform and Rural Economic Development. Jakarta, Indonesia. Febr. 5, 2010.

Invited Presentation to the Bank of Indonesia. Potential Roles of the Indonesian Banking Sector in Integrated Rural Economic and Community Development: Needs and Opportunities. January 21, 2010.

Studium Generale Lecture, Bogor Agricultural University, Indonesia. Subsoil Water Retention Technology: Revolutionary Method to increase Food and Cellulosic Biomass Production, and Conserve Water while reducing Groundwater Contamination in Sandy Soils. Organized by the Faculty of Agriculture. October 14, 2009

Invited Presentation. Agrarian Reform and Rural Economic Development. Indonesian National Land Agency Workshop, Bogor October 4, 2009

Seminar, International WOTRO Science for Global Development Workshop Developing Interdisciplinary Approaches in Action Research (AR), Sep. 30, 2009. Hanoi, Vietnam.

Seminar, International WOTRO Science for Global Development Workshop,. Resource Exploitation and Conflict: Comparative Assessment and Indicators for Economic Development and Communal Resource Access. Sep. 29, 2009. Hanoi, Vietnam

Studium Generale Lecture, Bogor Agricultural University, Indonesia. Comparative Policy Approaches to Regional Planning and Landscape Management, Organized by the Department of Landscape Architecture, April 10, 2007.

Seminar to the Ministry of Agriculture, Indonesia, Survey on the Impact on Homestead Gardens on Rural Households, November 7, 2006

First Seminar on Global Environmental Science. Tokyo Agricultural University, Tokyo, Japan. April 12, 2004.

Comparative Assessment and Spatial Indicators for Economic Development, Land Use Planning and Environmental Management. Seminar, Graduate School of Global Environmental Studies, Kyoto University, Japan. April 9, 2004

Comparative Perspectives on the Establishment of an Environmental Protection Center. Seminar presented at Ubon Ratchathani University, Thailand . October 17, 2002

Sustainable Development and Land Use: Opportunities for International Academic Collaboration. Presentation, Euro League Conference on Education and Science - Natural Resource Management, Life Sciences, Food Sciences and Environmental Sciences. Wageningen University, the Netherlands. October 3 – 5, 2002

Operationalizing Sustainable Development: A Systems Approach. Invited lecture in Agricultural Systems. Asian Institute for Technology (AIT), Bangkok. Feb. 29, 2000.

Rural Development Indicators: Guidelines for Rural Development Planning. Invited lecture at the Graduate School of Agriculture and Life Sciences. University of Tokyo, Feb. 24, 2000

Global Change and Subsistence Rangelands in South Africa: Resource variability, Access and Use in Relation to Rural Welfare. Workshop sponsored by the European Union in collaboration with the National Botanical Institute, Cape Town, South Africa. March 7-12, 1999

Environmental Indices and Public Policy: A Systems Perspective on Impact Assessment and Development Planning. Invited presentation at the First international Conference on Environmental Indices: System Analysis Approaches, July 7-11, 1997. St. Petersburg, Russia.

"Economic Development, Environmental Planning and Policy". Seminar for the Chinese State Planning Commission. Michigan State University, December 9, 1994.

"Spatial Modeling of Environmental Impact and Public Risk". Guest Lecture RD 415 - Introduction to Impact Assessment. MSU. November 24, 1994.

"Environmental Policy and Planning: Contemporary European Perspectives" , Presentation at the Michigan Conference of Political Scientists, Alma College, Alma Mi. October 28-29, 1993.

Faculty Teaching Workshop, MSU. June 28-29, 1993.

Great Lakes Information Network Symposium, Ann Arbor. June 24-25, 1993.

"North Central Regional Teaching Workshop" - Purdue University. June 21 - 23, 1993.

"Systems Approaches to Land Evaluation and Development Planning". Seminar, Center for Resource and Environmental Studies, Australian National University, Canberra, Australia, March 9, 1993.

"Interdisciplinary Research Collaboration in Resource Management and Planning", Seminar, Bogor Agricultural University, Bogor, Indonesia. March 3, 1993.

"Regional Economic Development Needs and Opportunities: Practitioners and Research Perspectives", Presentation at the EDA Regional Conference, Milwaukee, Oct. 22-24, 1992.

"Spatial Information Systems in Land Evaluation, Impact Assessment and Economic Development Planning", Seminar, Michigan Partnership for Economic Development Assistance. Michigan State University, East Lansing. October 3, 1991.

"Applied Spatial Information System Technologies in Resource Management and Planning", Guest Lecture in Resource Management Seminar Series, East-West Center, Honolulu, Hawaii and Department of Geography, University of Hawaii. Febr. 6, 1991.

"Computer Applications for Economic Development Planning", Invited Presentation, 1990. **Planning Local Economic Development in the 1990's. Regional Economic Development Administration Conference, US Dept. of Commerce, Chicago. October 22 and 23, 1990.**

"Natural Resource Characteristics and Economic Development: The Challenges", A Short Course presented to the Michigan Municipal Treasurers Institute. October 15 -19, Schuss Mountain Resort, Bellaire, Michigan.

"Quantitative Land Evaluation for Rural Development Planning: Concepts, Approaches and Applied Systems". UNDP-sponsored Lecture Series, Beijing, China. September 3 - 15, 1990.

"Spatial Information Systems in Land Evaluation, Economic Classification and Development Planning". Presentation at the Regional Economic Development Administration Workshop, Grand Rapids, Mi. June 4, 1990.

"Case Studies in Resource Analysis and GIS Applications". Training series in GIS Resource Analysis Applications. Conducted at the CESID-AUBURN Agroforestry Project and the USAID Mission, Port-au-Prince, Haiti. October, 1989 and January, 1990.

"Natural Resource Management for Sustainable Development". Guest lecture presented at the Workshop in Sustainable International Development, MSU Kellogg Biological Station, September 10-15, 1989.

"The Midwest Low-level Radioactive Waste Compact: Policy, Legal and Siting Issues" . MSU Guest Lecture in Resource Development 480/880: Special Topics in Resource Management - Waste Management Seminar. May 23, 1989.

"Computer-aided Land Resource Evaluation". MSU Guest Lecture in Geography 411 - Geographic Information System Analysis, April 19, 1989.

"Waste Management Facility Siting". MSU Guest Lecture in Resource Development 480/880: Special Topics in Resource Management - Waste Management Seminar. August 4, 1988

"Low-level Radioactive Waste Siting Analysis: State-wide Screening for Area Suitability". Public presentation commissioned by the Michigan Low-level Radioactive Waste Authority. Lansing. June 28, 1988.

"Resource Inventory and Land Evaluation for Sustainable Development. Guest Lectures and Laboratory Assignment, Module # 3. in Sustainable Development Experimental Course RD 880. MSU. June 27 and 28, 1988

"Geographic Information System Workshop". Joint workshop conducted with University of California - Berkeley faculty (Dean of the School of Environmental Design - Dr. Dickert) using CRIES - GIS software during the Geographic Information System 1987 Symposium, San Francisco, University of California, Berkeley. October 26, 1987.

"The CRIES Systems Approach to Resource Assessment and Quantified Land Evaluation". **Invited Lecture** to the **Chinese Academy of Agricultural Sciences, Institute for Resource Surveys and**

Agricultural Zoning, Beijing, China. September 14, 1987.

"Quantitative Land Evaluation: An Introduction to Concepts, Analytical Procedures and Applied Models with Special Emphasis to the Dominican Republic", USAID - sponsored workshop conducted for Secretariat of Agriculture personnel, Dominican Republic, East Lansing, Mi. July 12 - 18, 1987.

"GIS-based Environmental Impact Assessment", Guest Lecture in Resource Development 812 - Public Direction in Land Use, MSU May 26, 1987.

"System Approaches to Food & Agricultural Problems", Presentation during the Curriculum Development Workshop organized by the National Agricultural & Natural Resources Curriculum Project, Food and Agricultural Systems Task Group. North Carolina State University, Raleigh, May 24 - 29, 1987.

"Computers and Their Applications in Landscape Architecture", Invited Presentation to the Michigan Chapter of the American Association of Landscape Architecture, Kalamazoo, Michigan. February 27, 1987

"Applied Spatial Information Systems in Site Analysis: The CRIES- GIS", Guest Lecture , Department of Landscape Architecture 410 - Computer Applications in Planning and Landscape Architecture. MSU January 27, 1987.

"Future Directions in Spatial Information System Development", Invited seminar presented during the Annual Conference of the American Association of Landscape Architects (ASLA). San Francisco. November 24, 1986.

"Geographic Information System Workshop", invited presentation to the special interest group on information systems during the Annual Conference of the American Association of Landscape Architects, San Francisco. November 24 - 26, 1986

"Quantitative Land Evaluation: The CRIES project Experience". Invited Presentation during a the USDA-SCS-sponsored International Workshop on Quantified Land Evaluation, Washington. D.C. April 27 - May 2, 1986.

"The CRIES - AIS- YIELD Model", User Workshop conducted during the XIII th Congress of the International Society of Soil Science, Hamburg, August 13 - 20, 1986.

"CRIES - An Overview of an Approach for National and Regional Resource Planning and Policy Development", Invited seminar for the Society for International Development, Michigan State University, January 17, 1986.

"National Resource Assessment and Planning: A Computer-aided Approach", Invited Seminars for USAID staff and Ministry of Agriculture, Natural Resources and Rural Development staff, Government of Haiti, Port-au-Prince, Haiti. October 1985

"The Role of Remote Sensing and Information Systems in Less Developed Countries", Invited presentation during the "Building for the Future Workshop", College of Agriculture and Natural

Resources, MSU February, 1985.

"The Integrated Digital Data Base for Kenya : Current Uses and Future Applications", Invited Presentation to FAO and Government of Kenya Officials, May 11-19, 1984. Nairobi, Kenya.

"Information System and Satellite Data Processing USAID - sponsored Workshop", Jamaican Ministry of Agriculture, Kingston, Jamaica. Jan. 2-20, 1984.

"The Application Context of Resource Surveys and Analysis for Rural Development Planning in LDC's: Technology, Constraints and Prospects." Invited presentation during the East-West Center Workshop on the Implementation of Remote Sensing Technology for Economic Development. Quezon City, Philippines. October 3-7, 1983.

"Applications of Satellite Remote Sensing and Geo-referenced Systems to Resource Management." Invited paper presented at the National Conference on Resource Management: Energy and Environment. San Francisco, California. August 24, 1983.

Application of Remote Sensing and Information System Technology for Global Food Production Assessment. Invited presentation to the Information System Interest Group, Information Management Branch. NASA Goddard Space Flight Center. July 11, 1983.

Land Use Trend Analysis using Satellite and Computer Technology. Invited Paper presented to the International Association of Impact Assessment, 1983 Annual Meeting, Detroit. May 26, 1983.

Global Population Supporting Capacity and Food Production. Invited Presentation to the "President's Club," Michigan State University. May, 1983.

Guest Lecture, Seminar RD 802: International Resource Development; "Integrated Survey Procedures for Development Planning." MSU March, 1983.

"Resource Assessment Procedures for International Rural Development." Invited Presentation to the Center for Advanced Studies in International Development (CASID), Michigan State University. February 25, 1983.

Radio interview, "Public Perspectives and Foreign Aid Policy in Central America" with Irene Doyle and Richard Preston. WKAR-FM, MSU- PBS, February 15, 1983.

"CRIES Project Approach to Resource Inventory and Assessment." January, 1983, Presentation to the Ministry of Agriculture, Kingston, Jamaica.

"Integrated Remote Sensing and Resource Assessment Techniques: CRIES Project Activities in Honduras." Presentation to USAID administration and staff in Honduras., and two presentations to Honduran Ministry of Natural Resources Administrators and staff Tegucigalpa, Honduras. January, 1983.

"Remote Sensing for Natural Resources Assessment." Presentation to staff of the Space and Research and Remote Sensing Organization (SPARRSO), Dhaka, Bangladesh. December, 1982.

"Remote Sensing for Natural Resources Assessment." Presentation to staff of the National Center for Remote Sensing (NCRS), Kathmandu, Nepal. December, 1982.

Seminar and Short Course on "Natural Resource Assessment Using Geographic Information Systems." Ministry of Agriculture, Kingston, Jamaica. August 9-20, 1982.

Short course on "Natural Resource Assessment: Methods and Data Requirements to Assess Natural Resource Production Potential." Honduran Ministry of Natural Resources, Tegucigalpa, Honduras. June 8-10, 1982.

Seminar in IDC 838: Spatial Aspects of Rural Development in Africa: "Data Gathering Techniques for Rural Development in Africa." MSU April, 1982.

A Remote Sensing Workshop: Aerial Photography for Natural Resource Assessment. Kingston, Jamaica. March 29 - April 7, 1982.

"CRIES Remote Sensing and Geographic Information System." Presentations to Inter American Institute for Agricultural Sciences (IICA), San Jose and CATIE staff, Turi Alba, Costa Rica, April, 1980.

"CRIES - Remote Sensing Workshops (I and II)." Secretariat of Agriculture and Sub-Secretariat of Natural Resources. Santo Domingo, Dominican Republic. January and March, 1980.

"Resource Inventory Procedures Using Light Aircraft Surveys." Presentations to the SIEDRA Project, Subsecretariat of Natural Resources, Santo Domingo, Dominican Republic. November - December, 1979.

"Impact of Sand Mining Activities along Michigan's Shoreland Zone." Presentation during a Michigan Department of Natural Resources Workshop in Hoffmaster State Park, June 14, 1978.

Presentations on "Light Aircraft Remote Sensing" during a Cooperative Extension Workshops in St. Joseph, June 7-8, 1978 and Kalamazoo, June 18, 1978.

Presentation on "Sand Mining Inventory and Impact Assessment" to the Southwest Regional Planning Commission, Benton Harbor. February 27, 1978.

"Monitoring Erosion Loss Due to Off Road Vehicle Activities." Presentations to the Grand Mere Association Annual Meetings, 1976 and 1977., St. Joseph, Mi.

Consulting and Scientific Assignments:

Fulbright Foundation. Institutional collaboration and review of research process and curricula in the Agricultural Sciences, Anton de Kom University, Suriname. 2016

TetraTEch/USDAID, Ethiopia. Land Administration to Nurture Development (LAND). January – June 2014

ABT Associates and MCC, Indonesia. Participatory Land Use Planning (PLUP), October 2013

World Bank, Government of Indonesia. 2008-10. Agrarian Reform Policy and Development Planning.

Iceland Ministry of Education, Science and Culture. Academic Program Review. Accreditation of Higher Education Institutions in Iceland. 2007-08.

Rural Development Institute. Indonesian Farming Systems Research. 2006-07.

Dutch Institute for Quality Insurance of University Programs. October 2003 – February 2004. Review Committee for Life Science and Natural Resources Programs, Wageningen University. Netherlands.

Japan Society of the Promotion of Science. Graduate School of Global Environmental Studies, Kyoto University. 2003-04.

Scientific Committee “Land Resources and Landscape: Planning and Management” – European Agricultural Engineering Conference. Leuven, Belgium. 2003- 04.

Fulbright Foundation. 2002-03. Design and Establishment of an Environmental Protection Center at the Ubon Ratchathani University, Faculty of Engineering. Thailand

Government of Slovenia. 1998. Evaluation Remote Sensing Action Plan, National Bureau of Statistics, 1998-2001.

Government of Slovenia. 1997. National GIS-based Information System Development. NATO Proposal.

FAO, Italy. Rural Development Division. Review research agenda and recommendations associated with land tenure and land markets initiatives. February – April, 1997.

FAO. Land Tenure Center. Project implementation mission Slovenia. March 1997.

Michigan Association of Radioactive Waste Producers (MICHRAD), Various consultations on Low-level Waste Site Selection Criteria and Siting Process. 1994

UNDP, Bangladesh, Tropical Research and Development. Coastal Zone Resource Management Identification and Project Formulation mission, Dhaka, October/November, 1991.

UNDP, China. Institutional Capability Development. Technology Transfer Assistance. Institute for Resource Surveys and Regional Development, Chinese Academy of Agriculture. Beijing, September 1990.

Earth Satellite Corporation, (EarthSat), Maryland. International Technology Transfer, Training and Project Design Assistance, Haiti. October 1989 and January 1990.

Batelle Laboratories, Ohio. Public Information and Education Workshops on Radioactive Waste Facility Siting Analysis. Michigan. 1989 and 1990.

Scientific Applications International Corp. (SAIC), California. Project Design Support for a Proposal for General Contracting Support related to the Establishment of a Low-level Radioactive Waste Facility in Michigan. April 1989.

Radioactive Waste Authority, Department of Management and Budget, State of Michigan, Development of a State-wide Screening Methodology for Radioactive Waste Disposal Siting Analysis, Jan. 1988

Winrock International, Development of CRIES Implementation program as part of the ADS II project in Haiti, October 1985.

Development Alternatives Inc., Washington D.C. Project Design for Implementation of the CRIES project in the Philippines. USAID and Ministries of Agriculture and Food and Natural Resources, Government of the Philippines, June 1985.

International Institute for Environment and Development (IIED), Project Design for Implementation of the CRIES project in Haiti, USAID and Ministry of Planning, Government of Haiti, June 1984.

Food and Agricultural Organization (FAO), Rome. Potential Supporting Capacities of Lands in the Developing World, Kenya Country Study. Ministry of Finance and Planning, GOK with Land and Water Development Division, FAO and International Institute for Applied Systems Analysis (IIASA), May 1984.

IADS, Project Proposal for Rain-fed Resources Development Project, USAID, Ministry of Agriculture and Ministry of Natural Resources, Government of the Philippines, Fall 1983

Trans-Asia Engineering. Jakarta-Indonesia, Project design of a resource assessment project for the trans-migration program and site evaluation in South Sumatra and West Irian, 1982.

Centro Universitario Regional Del Litoral Atlantico (CURLA), Universidad Nacional Autonoma de Honduras, La Ceiba, Honduras C.A. Technology Transfer and Institutional Capability Development, U.S. AID, 1981.

Instituto Tecnologico Regional de Merida, Curriculum design recommendations in Resource Development, Resource Inventory and Analysis Methods, Capability development relating to Remote Sensing and Geographic Information Systems Applications, Mexico, 1981.

US-AID Mission, Honduras. Remote Sensing proposal to generate Agricultural and Natural Resources Information and conduct related training activities for the Ministry of Natural Resources, 1980.

Resource Information Associates, Aerial inventories and mapping projects, Michigan, 1980, 1981.

USDA, Foreign Agricultural Service, Office of International Cooperation and Development. Design for a Regional Resource Inventory and Evaluation Project of the four western provinces of the Republic of Sudan, 1980.

Inter-American Institute of Agricultural Sciences (IICA), Costa Rica. Proposal for data generation and information system development for Central American Countries, 1980.

USDA, Foreign Agricultural Service. Office of International Cooperation and Development. Multi-country design proposal for implementation of automated remote sensing techniques for agricultural crop inventories and yield assessment. Morocco, Bolivia, Jamaica, Dominican Republic, Costa Rica and Peru, 1980.

State Sugar Council, Dominican Republic. (USAID). Sugar cane rust detection and qualification program. Recommendations on the selection of marginal sugar cane production areas, 1978.

American Agronomics, Florida. Remote Sensing-derived Quantification of Canopy Stress Levels in Citrus Groves, 1978.

Michigan Department of Natural Resources, Geological Survey. Monitoring and Enforcement of the "Sand Dune Protection and Management Act" 1977-78.

Grand Mere Association, Benton Harbor, Michigan. Aerial Quantification of Surface Erosion Rates in a Protected Dune Environment 1975-76.