

DR. PETER VAN STRAATEN

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EMPLOYMENT

University of Guelph

Guelph/Canada

September 1985 – present

Present position: *Associate Professor*

- Teaching undergraduate courses at University of Guelph: Introductory geology, agogeology, environmental geology, applied structural geology; economic geology, earth material science, courses on phosphate geology, agroecosystems management.
- Supervision of graduate students from Africa, Asia and Canada.

- Research and development in sustainable agricultural practices in tropical countries. Innovative methods to increase soil productivity in tropical and temperate climates.
- Applied research in waste utilization and environmental protection, research on zeolite utilization to reduce nitrogen losses from manure. Applied research in modification and utilization of phosphate rocks.

- Project coordinator for agogeology projects Zimbabwe-Canada (1993-2002), Ethiopia-Canada (1988-93), Tanzania-Canada (1985-1992), Sri Lanka-Canada (1993-95) soils research and mineral exploration for phosphates, zeolites, liming materials; innovative phosphate processing techniques; fertilizer resource assessment; zeolite applications, environmental impact assessment, project management.
- Collaborator with soil fertility group of the International Centre for Research in Agroforestry (ICRAF), responsible for mineral nutrient inputs.
- Workshop Director: Small Scale Mining and the Environment, Namibia 1997.
- Consultant to United Nations Revolving Fund for Natural Resource Exploration: Agromineral resource evaluation in sub-Saharan Africa.
- Consultant to the Embassy of The Netherlands in Tanzania: environmental work on mercury contamination associated with small scale gold mining in Tanzania.
- Workshop Director: The role of agogeology in poverty reduction, UNESCO workshop, Kampala/Uganda, Sept. 2002.
- Consultant: Natural resource and environmental assessment, Van Straaten International Minerals Ltd.
- Committee member on Canadian International Development Agency (CIDA) - NGO Project Facility: project assessment, evaluation of Project innovation, special program.
- Consultant: World Bank supported project: Undergraduate Quality Education in Indonesia: Evaluation of Geophysics Study Program, G. M. University Yogyakarta.

Funding/partner institutions: International Development Research Centre (IDRC); International Centre for Research in Agroforestry (ICRAF) Nairobi/Kenya; Canadian International Development Agency (CIDA); Institute of Mining Research, Zimbabwe; Institute of Fundamental Studies, Sri Lanka; National Institute of Small Scale Mining (NISM), India; World Bank.

Professional site visits to: Africa (Burundi, Cote d'Ivoire, Ethiopia, Ghana, Lesotho, Kenya, Malawi, Namibia, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe), Asia (China, India, Indonesia, Sri Lanka); Central and South America (Brazil, Chile, Costa Rica, Cuba, Ecuador).

Senior Mineral Exploration Geologist April 1981 - June 1984
United Nations, Economic Commission for Africa Dodoma/Tanzania

- Project management and administration in United Nations projects in 6 East African countries,
- advising governments of Ethiopia, Uganda, Tanzania, Mozambique on national mineral exploration potentials, economic assessment of gold properties,
- advisory services to mineral projects in Tanzania and Ethiopia on fertilizer raw materials exploration and utilization, including rock phosphates, zeolites.
- mineral resource assessment in Eastern Africa for indigenous fertilizer raw materials.

Exploration Geologist March - December 1980 Goslar/Germany
- exploration for gold and tin/tungsten in Germany and Italy.

Field Geologist May 1977 - December 1979 Bukoba/Tanzania
United Nations Development Programme (UNDP)

- Mineral exploration in Northwest Tanzania (mapping, geochemical sampling of lateritic nickel deposit (Kabanga/Tanzania), and tin/tungsten targets,
- Geologist-in-charge of drilling campaign in lateritic nickel target area,
- Evaluation of drilling data,
- Supervision of geochemical and geological exploration activities,
- Counterpart-training, management of field parties, administration.

Geochemist (Associate Expert) June 1975 - April 1977 Bukoba/Tanzania
United Nations Development Programme (UNDP)

- Regional geochemical exploration, geological mapping, on lateritic nickel targets.
- Coordination and supervision of field parties,
- Training of counterpart geologists.

EDUCATION:

- "Diplom" (equiv. to M.Sc.), grade "A" 1966- 1969
University of Goettingen Goettingen, Germany
Degree - Grade "A"
- Dr. rer. nat. (equiv. to PhD) 1971-1974
University of Goettingen Goettingen, Germany
Degree - " With Distinction"

AWARD:

1996 Teaching Excellence Award from the Central Student Association of the University of Guelph

SKILLS:

LANGUAGES: English and German (fluently), Dutch and Kiswahili (working knowledge), French (rudimentary),
Proven international project management and organization abilities,
Team leadership abilities,
Innovative research abilities,
Cross-cultural understanding.

BOOK:

van Straaten P 2002. Rocks for crops: Agrominerals of sub-Saharan Africa. ICRAF, Nairobi,

Kenya, 338 pp.

REFEREED CHAPTERS IN BOOKS:

- van Straaten P 1999. Cattle manures in Zimbabwe: Methods and minerals for quality improvement. In: JF Devlin and T Zettel (eds). *Ecoagriculture: Initiatives in Eastern and Southern Africa*. Weever Press, Harare, Zimbabwe, 87-103.
- van Straaten P 1999. The effects of small-scale gold mining on the environment at Tafuna Hill, Zimbabwe. In: WJ Caldwell (ed). *Issues and Responses: Land use planning in Eastern and Southern Africa*. Weever Press, Harare, Zimbabwe, 215-234.
- van Straaten P 1995. Mineral exploration for carbonatite related phosphates in SW Tanzania. In: Blenkinsop, T.G. and P.L. Tromp (eds.) *Sub-Saharan Economic Geology*. Geol. Soc. Zimbabwe Spec. Publ. 3. Balkema Publishers, Netherlands, 87-102.
- van Straaten P and TRC Fernandes 1995. Agrogeology in Eastern and Southern Africa: a survey with particular reference to developments in phosphate utilization in Zimbabwe. In: Blenkinsop TG and PL Tromp (eds.) *Sub-Saharan Economic Geology*. Geol. Soc. Zimbabwe Spec. Publ. 3, Balkema Publishers, Netherlands, 103-118.
- van Straaten P 1989. Nature and structural relationships of carbonatites from Southwest and West Tanzania. Chapter 8 In: Bell K (ed.) *Carbonatites - Genesis and Evolution*. Unwin Hyman, London, 177-199.
- van Straaten P 1984. Gold mineralization in Tanzania - a review. In: Foster RP (ed.): *Gold '82. The geology, geochemistry and genesis of gold deposits*. Geol. Soc. Zimbabwe, Spec. Publ. 1, Balkema Publishers, Netherlands, 673-685.
- van Straaten P 1977. *Geologie und Lagerstaetten*. Chapter 5 in: Leifer W (ed.) *Kenia*; Erdmann Verlag, Tuebingen, Basel 1977:91-102.

PUBLICATION IN REFEREED JOURNALS:

- Odongo NE, Plaizier J, van Straaten P and B McBride 2002. The effects of replacing dicalcium phosphate with Busumbu rock phosphate on performance and the mechanical properties of bone in growing chicks. *Trop. Animal Health Prod.* 34:349-358.
- Odongo NE, Tanner J, Romney DL, Plaizier J, van Straaten P and B McBride 2002. The effects of supplementing Napier Grass (*Pennisetum purpureum*) with rock phosphate and steamed bone meal compared with a commercial mineral mix on phosphorus absorption in cattle. *Trop. Animal Health Prod.* 34:329-338.
- van Straaten P 2000. Mercury contamination associated with small scale gold mining in Tanzania. *Science of the Total Environment.* 259: 105-113.
- van Straaten P 2000. Human exposure to mercury due to small scale gold mining in N-Tanzania. *Science of the Total Environment.* 259: 45-53.
- van Straaten P and C Pride 1993. Agrogeological resources for small scale mining. In: Pride C and P van Straaten (eds.) *Agrogeology and small scale mining*. Small Mining International, Bulletin 5-6:5-9.
- Chesworth W, van Straaten P and JMR Semoka 1989. Agrogeology in East Africa: the Tanzanian-Canada project. *J. African Earth Sciences*, 9:357-362.
- Groenevelt PH, van Straaten P, Rasiah V and J Simpson 1989. Modification in evaporation parameters by rock mulches. *Soil Technology*, 2:1-7.
- van Straaten P 1987. Agrogeological resources in eastern and southern Africa. In: Wachira JK and AJG Notholt (eds.): *Agrogeology in Africa*. Commonwealth Sci. Council, Technical Publ. Series 226:12-36.
- Chesworth W, van Straaten P, Smith P and S Sadura 1987. Solubility of apatite in clay and zeolite bearing systems: application to agriculture: *Applied Clay Mineralogy* 2:291-297.
- van Straaten HP 1977. Morphotectonic investigations along the Western Rift in the Masindi area, Bunyoro District, N.W.-Uganda. *Geol. Rdsch.* 66:217-228.
- van Straaten HP 1976. Praekambrium und junges Western Rift im Bunyoro District, N.W.-Uganda (Ostafrika). *Geol. Jb. (B)* 18: 95p.

van Straaten P and M Tucker 1972. The upper Devonian Saltern Cove goniatite bed is an intraformational slump. *Palaeontology* 15, 1972:430-438.

PAPERS PUBLISHED IN NON-REFEREED JOURNALS:

- van Straaten P 1991. Agrogeology. In: Fernandes TRC (ed.) Third UNESCO regional training programme in mining geology. Harare/Zimbabwe, 46-51.
- Voroney RP and P van Straaten 1988. Use of natural zeolites in sand rootzones for putting greens. *Greenmaster Magazine*, 8:19.
- van Straaten P 1985. Contributions to the geology of the Kibaran belt in Northwest Tanzania. *Geology for Development, Newsletter* 3:59-68.
- van Straaten P, Chesworth W, Semoka JMR, and EP Mchihyo 1985. Agrogeology in Tanzania. *Episodes* 8:257-258.
- van Straaten P and W Chesworth 1985. Low cost fertilizers: Local geological resources for subsistence farmers in Eastern Africa. In: Proceedings, United Nations Economic Commission for Africa - Second regional conference on the Development and utilisation of mineral resources in Africa, Lusaka/Zambia.
- van Straaten P 1981. Some aspects of mineral exploration in Tanzania. *Multinational Geochemical Workshop, UNESCO-ROSTA, Arusha/Tanzania, ESAMRDC/WS/ 14p.*
- Tissot F, Swager CP, Ingovatov A, van Straaten P, Berg RC and E Karbovsky 1980. Mineralization in the Karagwe-Ankolean System of North-West Tanzania. *Nat. Res. Forum*, 4:85-94.
- van Straaten P 1973. Precambrian structures and their relation to the Western Rift in the Masindi area, Bunyoro District, Uganda. *Abstr. 7th Coll. African Geology, Florence/Italy.*
- Tucker M and P van Straaten 1970. Conodonts and facies on the Chudleigh Schwelle. *Proc. Ussher Soc.* 2:160-170.
- Tucker M and P van Straaten 1970. Conodonts from the Upper Devonian of the Saltern Cove-Elberry Cove area (abstr.). *Proc. Ussher Soc.* 2:159.

TECHNICAL REPORTS

- Heck RJ and P van Straaten 2003. Discrimination of soil solid phases using axial x-ray tomography.
- van Straaten P 2000. Poverty reduction in sub-Saharan Africa: Geological resources for sustainable crop production. United Nations Revolving Fund for Natural Resources Exploration, 274 pp.
- van Straaten P 1998. Small scale gold mining in the Shinyanga, Kahama and Bukombe Districts, Tanzania impacts on the environment and human health. Report for DHV to the Government of the Netherlands, 261 pp.
- van Straaten P 1998. Mercury pollution associated with artisanal mining at Tafuna Hill near Shamva, Zimbabwe. Final Report to the Environmental Capacity Enhancement Project (ECEP), 21 pp.
- van Straaten P 1997. Phosphate resources of Central East Africa. Report to Canada-CGIAR Linkage Fund (CIDA), 49 pp.
- van Straaten P and C Pride 1993. Agrogeological resources for small scale mining. In: Pride C and P van Straaten (eds.) *Agrogeology and small scale mining. Small Mining International, Bulletin* 5-6:5-9.

PAPERS READ AT CONFERENCES:

University of Jenderal Soedirman, Purwokerto, Indonesia: Opening ceremony of Indonesia Agrogeology Development Center (invited speaker – opening speech) 14th June 2003:

Agrogeology in the 21st century: A contribution to sustainable agriculture.

Danish Society of Soil Science, Copenhagen/Denmark 2002: (Symposium on Phosphate Rock): Phosphate Rock Deposits in sub-Saharan Africa: Geology, Resources and Agronomic Potential. August 29, 2002, Royal Veterinary and Agricultural University (KVL).

Universitas Jenderal Soedirman, Purwokerto/Indonesia, 2002. Utilization of local mineral resources for development of sustainable agriculture. September 16, 2002(Seminar).

Geological Society of Africa/Geol. Soc. Uganda. International conference. Kampala, Uganda 2001: East African carbonatites: unique geological nutrient resources. Sept. 10, 2001.

Geological Society of Africa/Geological Society of Uganda. International conference. Kampala/Uganda, 2001: Phosphate resources in sub-Saharan Africa in time and space. Sept. 10, 2001.

International Centre for Research in Agroforestry (ICRAF), Nairobi/Kenya, 2001.

Carbonatites: unique rocks for trees, shrubs and crops. Examples from Eastern and Southern Africa. (Invited).

Instituto de Ingenieros de Minas de Chile. Santiago/Chile 2001:

Mineral resources for sustainable agricultural production. (Invited).

5th International Conference for Mercury as Global Pollutant, Rio de Janeiro, Brazil: 1999

Artisanal gold mining in selected areas of Tanzania and Zimbabwe: Mercury pathways and impact on environment and human health. Oral Pres.

KARI-ICRAF-FAO-World Bank-IFDC, Kenya: 1999

Soil fertility initiative for Africa: Rock phosphates of eastern Uganda. Nairobi-Kisumu, Kenya Workshop.

Desert Research Institute, Reno/Nevada/USA: 1999

Agrogeology in Africa: innovative approaches to soil fertility. Oral presentation. (Invited)

International Centre for Research in Agroforestry (ICRAF), Nairobi/Kenya: 1998

Ugandan Phosphates: From Rocks to Crops. Nairobi/Kenya Dec. 1998. (Invited)

International Centre for Research in Agroforestry (ICRAF) Nairobi/Kenya: 1997

Phosphate rock deposits in East Africa. Nairobi/Kenya, July 18, 1997. (Invited)

CIDA/ECEP: Windhoek, Namibia 1997.

Small scale mining and the environment: shaping our common future. Windhoek, Namibia. Key note address, regional workshop for Eastern and Southern Africa.

Government of Tanzania/Embassy of the Netherlands: Shinyanga/Tanzania 1997

Regional Workshop: Impacts on the environment and human health. Summary of findings of study: small scale gold mining in the Shinyanga, Kahama and Bukombe Districts, Tanzania.

Geological Association of Canada: Vancouver/Canada 1993

Zeolites in agriculture and horticulture: reduction of nitrogen losses. Symposium of the Geological Association of Canada: 'Industrial Minerals in Environmental Applications'. November 18/19, 1993.

UNESCO: Bujumbura/Burundi, 1984.

Contributions to the geology of the Kibaran belt in Northwest Tanzania - UNESCO conference "Geology for Development".

UNESCO, Regional Office for Science and Technology: Harare/Zimbabwe 1990

Introduction to Agrogeology. Third UNESCO Regional Training Course in Mining Geology. August/September 1990.

United Nations Development Programme: Maseru/Lesotho: 1990

Agrogeological Resource Development. Spec. Agrogeology Workshop, UNDP, 10-17. 9.1990.

Commonwealth Science Council: Kampala/Uganda 1989

The agrogeology network for Africa: Objectives and activities. May 24-27 1989.

United Nations Economic Commission for Africa: Lusaka/Zambia 1985

Low cost fertilizers: Local geological resources for subsistence farmers in Eastern Africa. In: United Nations Economic Commission for Africa (UNECA) – 2nd regional conference:

Development and utilisation of mineral resources in Africa, March 4-9, 1985.