CURRICULUM VITAE

PERSONAL DETAILS

Name: Hong YANG
Nationality: Swiss/Australian
Gender: Female
Date of birth: 6 Oct. 1957 (China)
Postal address: Swiss Federal Institute for Aquatic Science and Technology (Eawag)
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RESEARCH FIELD AND INTERESTS

- Water and environmental policies
- Integrated analysis and modeling for decision support
- Water and food relations
- Water scarcity and food security
- Virtual water trade and water footprint
- Sustainable development and poverty alleviation
- Adaptation to climate change in water management

TERTIARY EDUCATION AND QUALIFICATIONS

1991-1994 **Doctor of Philosophy**, Center for Asian Studies and China Economic Research Centre, the University of Adelaide, Australia.
Dissertation: Grain Production in China: Productivity Changes and Provincial Disparities, 1980-1992.

1989-1991 **Master of Arts,** Department of Geography, the University of Melbourne, Australia.
Thesis: China's Grain Production: Government Policies and Their Impacts Since the 1950s.

1983-1986 **Master of Science**, Department of Geography, East China Normal University, China.
Thesis: The Development of Agriculture and Animal Husbandry and Its Impact on the Local Ecosystem in the Sahelian Region, Western Africa.

1979-1983 **Bachelor of Science,** Department of Geography,
Beijing Normal University, Beijing, China.

1976-1977 **Diploma of Education**, the First Teachers' College, Xining, Qinghai, China.

OTHER PROFESSIONAL CERTIFICATES

2001	Certificate for the participation in the course on 'Modelling of Water Flow and Solute Transport in Variably Saturated Media', provided by the Swiss Federal Institute for Aquatic Science and Technology.
2000	Certificate for the participation in a training course on 'Environmental Economics for Policy Development', held by the World Bank Institute, Washington D.C.

RECORD OF EMPLOYMENT

1. CAREER EXPERIENCE (full-time)

2004-present **Senior scientist**
Group leader of water, food and environmental studies
Department of Systems Analysis, Integrated Assessment and Modelling
Swiss Federal Institute for Aquatic Science and Technology (Eawag).
Courses offered over the years:

- Environmental Management: Policies and Practice. (A block course at the Graduate School of the Chinese Academy of Sciences, China. (2006, 2007, 2008).
- Intensive course at Eawag on Multi-criteria decision and institutional analysis (2012 and 2013).

2012- **Professor in Sustainable Water Use**
Master in Sustainable Development Program, Department of Environmental Sciences, Basel University.
Course offering:

- Globalization of Water Resources.
- Introduction to Multi-disciplinary Models in Environmental Management

2002-present **Visiting professor**
Institute of Geographical Science and Natural Resources Research, the Chinese Academy of Sciences.

1999-2004 **Research scientist**
Group leader of water, food and environmental studies
Department of Systems Analysis, Integrated Assessment and Modelling
Swiss Federal Institute for Aquatic Science and Technology (Eawag).

1998-1999 **Assistant Professor**
Department of Geography and Geology, the University of Hong Kong.
Courses offered:

- Global Environmental Change: Science, Impact and Policy (with a focus on the human-dimension of GEC).
- Environmental Management: Principles and Practices.

1997-1998 **Assistant Professor**
Department of Geography, Hong Kong Baptist University.
Courses offered:

- Geography of Southeast Asia.
- Regional Geography of China.
- Selected Topics of the Geography in China.
- Quantitative Methods in Geographical Analysis.

1994-1997 **Research Associate**

China Economic Research Center and Center for Asian Studies.
The University of Adelaide, Australia.

1986-1988 **Associate Lecturer**
Department of Economics, Beijing Normal University, China.
Courses offered:
- World Economic Geography.
- Economic Geography of China.

2. OTHER WORK EXPERIENCE (part-time)

1993 **Research Assistant**
School of Social Sciences, Flinders University of South Australia.

1991-1994 **Teacher**
Vocational Language Learning Center of South Australia.
Principal editor of a Chinese textbook for the Vocational Language Learning Center, Australia (the Ammerlann Language System).

1990 **Secretary**
Student Union of the University of Melbourne, Australia.

SUPERVISION

Ph.D students:

2001-2004 Liu, Changshun (China). Center for Water Resources Research, Beijing Normal University, China. (co-supervisor)
2002-2005 Dong, Wenfu (China). Institute of Geographical Science and Natural Resources Research, Chinese Academy of Sciences. (co-supervisor)
2002-2006 Yang, Jing (China). Eawag/ETHZ. (co-supervisor)
2003-2007 Liu, Junguo (China). Eawag/ETHZ. (supervisor)
2003-2007 Schuol, Juergen (Germany). Eawag/ETHZ. (adviser)
2001-2008 Bluemling, Bettina (Germany). University of Osnabruck, Germany. (adviser)
2007-2010 Faramarzi, Monireh (Iran). Eawag/ETHZ. 2006-2010 (**won the best dissertation award of the Swiss Federal Institute of Technology (ETHZ)).** (supervisor)
2008-2011 Andersson, Jafet (Sweden). Eawag/ETHZ. (supervisor)
2009-2014 Folberth, Christian (Germany). Eawag/ETHZ. (supervisor)
2013- Liu, Wenfeng (China). Eawag/ETHZ. (supervisor)
2013- Kamali, Bahareh (Iran). Eawag/ETHZ. (supervisor)
2014- Jafarzadeh, Sogol (Iran). Eawag/ETHZ. (supervisor)

Master students:

2008-2009 Uvere, Franklin (Nigeria). UNESCO-IHE Water Education Center, Delft, the Netherlands. (supervisor)
2010-2011 Ahmed, Fauziatu (Ghana). UNESCO-IHE Water Education Center, Delft, the Netherlands. (supervisor)
2011-2012 Felicioni, Marco (Switzerland). Master in Sustainable Development, Basel University, Basel, Switzerland. (supervisor)
2012-2013 Alexandre Giovaninni (Switzerland). Master in Sustainable Development, Basel University, Basel, Switzerland. (supervisor).
2015- Stefanovic, Julia (Switzerland). Master in Sustainable Development, Basel University, Basel, Switzerland. (supervisor)

Ph.D and Master students conducted part of their research at Eawag under my supervision

2007 Dogaru, Diana (Romania), Geographical Institute, Romania Academy of Science.
2008 Pena-Haro, Salvador (Spain), School of Environmental Engineering, Valencia University of Technology, Spain.
2008 Zhao, Xu (China). College of Environmental Science, Beijing Normal University.
2010 Liu, Bo (China), Center for Water Research, Beijing Normal University.
2010 Zhang, Zhuoying (China), Graduate University, Chinese Academy of Sciences.
2011 Zuo, Depeng (China), Center for Water Research, Beijing Normal University.
2012 Demeke Achiso (Ethiopia), School of Political Science, Addis Ababa University.

PUBLICATIONS AND RESEARCH EXPERIENCE

1. REFEREED JOURNAL PUBLICATIONS AND BOOK CHAPTERS

Zhao, X., Tillotson, M., Yang, Z.F., **Yang, H**., Liu, J.G., Reduction and reallocation of water use of products in Beijing. *Ecological Indicators*. In press.

Yang, H., Aldaya, M., Liu, J.G., 2015. The potential for use and misuse of virtual water in water governance. *Sustainability and Policy*. In press.

Liu, W.F., Xu, Z.X., Li, F.P., Zhang, L.Y., **Yang, H**. 2015. Impacts of climate change on hydrological processes in the Tibetan Plateau: a case study in the Lhasa River basin. *Stoch Environ Res Risk Assess*. 29(7): 1809-1822.

Luo, X.P., **Yang, H**., Xia, J., 2015. Modeling water requirements of major crops and their responses to climate change in the North China Plain. *Environmental and Earth Sciences*. 74(4): 3531-3541.

Liu, J.G., Liu, Q.Y., **Yang, H**., 2015. Assessing water scarcity by simultaneously considering environmental flow requirements, water quantity, and water quality. *Ecological Indicators*. 60: 434-441.

Li, N., Wang, X.J., Shi, M.J., **Yang, H**., 2015. Economic impacts of total water use control in the Heihe River Basin in Northwestern China—An integrated CGE-BEM modeling approach. *Sustainability*. 7: 3460-3478.

Wang, X.J, **Yang, H**., Shi, M.J., Zhou, D.Y., Zhang, Z.Y., 2015. Managing stakeholders' conflicts for water reallocation from agriculture to industry in the Heihe River Basin in Northwest China. *Science of the Total Environment*. 505: 823–832.

Zuo, D.P, Abbaspour, K, **Yang, H**., Song, J.X., Peng, D.Z. Xu, Z.X., 2015. Simulating spatiotemporal variability of blue and green water resources availability with uncertainty analysis". *Hydrological Processes*. 29(8): 1942-1955.

Abbaspour, K. C., E. Rouholahnejad, S. Vaghefi, R. Srinivasan, **Yang, H**., B. Klöve. 2015. Modelling hydrology and water quality of the European Continent at a subbasin scale: calibration of a high-resolution large-scale SWAT model. *Journal of Hydrology*, 524: 733-752.

Shi M.J. Wang, X.J., **Yang, H**., Wang, T., 2014. Pricing or quota? Solution to water scarcity in oasis regions in China -- A Case Study in the Heihe River Basin. *Sustainability*. 6: 7601-7620.

Vaghefi, S., Mousavi, S.J., Abbaspour, K.C., Srinivasan, R., **Yang, H**., 2014. Analyses of the impact of climate change on water resources components, drought and wheat yield in semiarid regions: Karkheh River Basin in Iran. *Hydrological Processes*. 28: 2018-2032.

Folberth, C., **Yang, H**., Gaiser, T., Liu, J.G., Wang, X.Y., Williams, J. Schulin R.. 2014. Effects of ecological and conventional agricultural intensification practices on maize yields in sub-Saharan Africa under potential climate change. *Environmental Research Letter*. 9(4): Article Number: 044004. doi:10.1088/1748-9326/9/4/044004.

Khan, N.I. Brouwer, R., **Yang, H**., 2014. Household's willingness to pay for arsenic safe drinking water in Bangladesh. *Journal of Environmental Management*. 143: 151-161.

Osterwalder, L., Johnsona, A., **Yang, H**., Johnston, R. 2014. Multi-criteria assessment of community-based fluoride-removal technologies for rural Ethiopia. *Science of the Total Environment* (Special issue). 488: 536-542.

Johnston, R., Hug, S., Inauen, J., Khan, N., Mosler, H., **Yang, H**., 2014. Enhancing arsenic mitigation in Bangladesh: findings from institutional, psychological, and technical investigations. *Science of the Total Environment*. 488: 481-487.

Khan,N.I.; **Yang, H**. 2014. Arsenic mitigation in Bangladesh: An analysis of institutional stakeholders' opinions. *Sci. Total Environ*. 488: 497-508.

Rosenzweig, C., …Folberth, C.…**Yang, H**., …. , 2014. Assessing agricultural risks of climate change in the 21st century in a global gridded crop model intercomparison. *PNAS* (Special issue). 111(9): 3268-3273.

Karjalainen,T. P., Rossi, P. M. Ala-aho, P. Eskelinen, R. Reinikainen, K., Kløve, B., Pulido-Velazquez, M., **Yang, H**., 2013. A decision analysis framework for stakeholder involvement and learning in groundwater management. *Hydrol. Earth Syst. Sci*., 17, 5141–5153.

Yang, H., Pfister, S., Bhaduri, A., 2013. Accounting for a scarce resource: virtual water and water footprint in the global water system. *Current Opinion in Environmental Sustainability*. 5(6): 599–606.

Stefanopoulos, K., **Yang, H**., Gemitzi, A. Tsagarakis, K.P., 2013. Application of multi-attribute value theory for engaging stakeholders in groundwater protection in the Vosvozis catchment in Greece. *Science of the Total Environment*. 470: 26-33.

Folberth, C., **Yang, H**., Gaiser, T., Abbaspour, K.C., Schulin, R., 2013. Modeling maize yield responses to improvement in nutrient, water and cultivar inputs in sub-Saharan Africa. *Agricultural Systems*. 119: 22-34.

Liu, J.G., Folberth, C., **Yang, H**., Röckström, J., Abbaspour, C.K., Zehnder, A.J.B., 2013. A global and spatially explicit assessment of climate change impacts on crop production and consumptive water use. *Plos One*. 8(2): Article Number: e57750. DOI: 10.1371/journal.pone.0057750

Liu, J.G., Liu, J.G., **Yang, H**., You, L.Z., 2013. Water conservancy projects in China: Achievements, challenges and way forward. *Global Environmental Change*. 23(3): 633-643.

Faramarzi, M., Abbaspour ,C. K., Vaghefi, S.A., Farzaneh, M.R., Zehnder, A.J.B., Yang, H., 2013. Modeling impacts of climate change on freshwater availability in Africa. *Journal of Hydrology*. 480: 85–101.

Wei, S.K., **Yang, H**., Song, J.X., Abbaspour, C.K., Xu, Z.X., 2013. A wavelet-neural network hybrid modeling approach for estimating and predicting river monthly flows. *Hydrological Sciences Journal*. 58(2): 374-389.

Zhang, Z.Y., Shi, M.J., **Yang, H**., 2012. Understanding Beijing's water challenge: a decomposition analysis of changes in Beijings water footprint between 1997 and 2007. *Environmental Sciences & Technology*. 46(22): 12373-12380.

Folberth, C., Genser, T., Abbaspour, C.K., **Yang, H**., 2012. Regionalization of a large-scale crop growth model for sub-Saharan Africa: model setup, evaluation, and estimation of maize yields. *Agriculture, Ecosystems and Environment*. 151: 21-33.

Folberth, C., **Yang, H**., Wang, S., Abbaspour, C.K., 2012. Impact of input data resolution and extent of harvested areas on crop yield estimates in large-scale agricultural modeling for maize in the USA. *Ecological Modelling*. *Ecological Modelling*, 235–236: 8-18.

Wei, S.K., **Yang**, H., Xu, Z.X., Song. J.X., 2012. System dynamics simulation model for assessing socio-economic impacts of different levels of environmental flow allocation in the Weihe River Basin, China. *European Journal of Operational Research*. 221(1): 248-262.

Zuo, D., Xu. Z.X., **Yang, H**., Liu, X.C., 2012. Spatiotemporal variations and abrupt changes of potential evaportranspiration and its sensitivity to key meteorological variables in the Wei River basin, China. *Hydrological Processes*. 26: 1149–1160.

Andersson, J.M. Zehnder, A.J.B., Wehrli, B., **Yang, H.** 2012. Improved SWAT model performance with time-dynamic Voronoi tessellation of climatic input data in Southern Africa. *Journal of the American Water Resources Association.* 48(3): 480–493.

Duarte, R., **Yang, H**., 2011. Input-output and water: introduction to the special issue. *Economic Systems Research*, 23(4), 341-351.

Mousavi, J., Abbaspour, K, **Yang, H**., 2012. Uncertainty-based Automatic Calibration of HEC-HMS Model Using Sequential Uncertainty Fitting Approach. *Journal of Hydroinformatics*. 14(2): 286-309.

Zhang Z.Y., Shi, M.J., **Yang, H**., Chapagain, A., 2011. An input-output analysis of trends in virtual water trade and the impact on water resource and uses in China. *Economic Systems Research*. 23(4): 431-446.

Zhang, Z..Y., **Yang, H**., Shi, M.J. 2011. Analyses of water footprint of Beijing in an interregional input-output framework. *Ecological Economics*. 70(12): 2494-2502.

Zhang, Z.Y. **Yang, H**., Shi, M.J., Zehnder, A.J.B., Abbaspour, K.C., 2011. Analyses of impacts of China's international trade on its water resources and uses. *Hydrology and Earth System Sciences*. 15: 2871-2880.

Andersson, J., Zehnder, A.J.B. Rockström, J. **Yang, H**., 2011. Potential impacts of water harvesting and ecological sanitation on crop yield, evaporation and river flow regimes in the Thukela River basin, South Africa. *Agricultural Water Management*. 98(7): 1113-1124.

Yang, H., Zhou, Y., Abbaspour, K., 2010. An analysis of economic growth and industrial wastewater pollution relations in China. *Consilience*. 3(1): 60-79.

Zhou, Y, **Yang, H**., Mosler, H., Abbaspour, K., 2010. Factors affecting farmers' decisions on fertilizer use: a case study for the Chaobai watershed in Northern china. *Consilience*. 3(1): 80-102.

Zhao, X, **Yang, H**., Yang, Z.F., Chen, B., Qin, Y., 2010. Applying the input-output method to account for water footprint and virtual water trade in the Haihe River basin in China. Environmental Science & Technology. 44(23): 9150-9156.

Faramarzi, M., **Yang, H.,** Mousavi, J., Schulin, R., Binder, C., Abbaspour, K., 2010. Analysis of intra-country virtual water trade strategy to alleviate water scarcity in Iran. *Hydrology and Earth Systems Sciences*. 14: 1417-1433.

Faramarzi, M., **Yang, H**. Schulin, R., Abbaspour, C.A., 2010. Modeling wheat yield and crop water productivity in Iran: Implications of agricultural water management for wheat production. *Agricultural Water Management*. 97(11): 1861-1875.

Liu, J. G., **Yang, H**., 2010. Spatially explicit assessment of global consumptive water uses in cropland: green and blue water. *Journal of Hydrology*. 384: 187-197.

Liu, J.G., You, L.Z., Amini, M., Obersteiner, M., Herrero, M., Zehnder, A.J.B., **Yang, H**. 2010. A high-resolution assessment on global nitrogen flows in cropland. *PNAS*. 107 (17): 8035-8040.

Wei, S.K., **Yang, H**., Abbaspour, K., Mousavi, J., Gnauck, A., 2010. Game theory based modes to analyze water conflicts in the Middle Route of the South-to-North Water Transfer Project in China. *Water Research*. 44**(**8)**:** 2499-2516**.**

Wei, S.K., **Yang, H.,** 2010. Using game theory based approaches to simulate stakeholder conflicts concerning domestic water allocation and pollution reduction in inter-basin water transfer in China. *Journal of Beijing Normal University (Natural Science)*. 46(3): 254-267.

Bluemling, B., **Yang, H**., Mosler, H., Pahl-Wostl, C., 2010. Adoption of agricultural water conservation practices, - a question of individual or collective behaviour? *Outlook on Agriculture*. 39(1): 7-16.

Blümling, B., **Yang**, **H.,** Pahl-Wostl, C., Mosler., H. 2010. 'Implications of stakeholder constellations for irrigation at jointly used wells cases from the North China Plain', China. *Society & Natural Resources.* 23(6): 557-572.

Yang, H., Zhou, Y., Liu, J.G. 2009. Land and water demand of biofuel and implications for food and folder market supply in China. *Energy Policy*. 37: 1876-1885.

Andersson, J., Zehnder, A.J.B., Jewitt, G., **Yang, H**. **2009.** Water availability, demand and reliability of in situ water harvesting in smallholder rain-fed agriculture in the Thukela River Basin, South Africa**.** *Hydrology and Earth Systems Sciences*. 13: 2329-2347.

Liu, J. G., and **Yang, H**., 2009. China fights against statistical corruption. *Science*. 325 (7): 675-676.

Abbaspour, K. C., M. Faramarzi, S. S. Ghasemi, and **Yang**, **H.** 2009. Assessing the impact of climate change on water resources of Iran, *Water Resources Research*, doi:10.1029/2008WR007615.

Liu, J. G. Zehnder, A.J.B., **Yang, H**. 2009. Global crop water use and virtual water trade: the importance of green water. *Water Resources Research*. 45: doi.10.1029/2007WR006051.

Dogaru. D., Zobrist, J., Balteanu, D., Popescu, C., Sima., M., Amini, M., **Yang, H.**. 2009. Analysis of local community perception of water quality in Cetej, Romania. *Environmental Management***.** 43(6): 1131-1145**.**

Zobrist, J., Sima, M., Dogaru, D., Senila, M., **Yang, H**., Popescu, C., Roman, C., Abraham, B., Frei, L., Dold, B., and Balteanu, D. 2009. Integrated environmental and socioeconomic assessment of impacts by mining activities –A case study in the Certej River Catchment, Western Carpathians, Romania. *Environmental Science and Pollution Research*. 16: 14-26.

Zhou, Y., Zhang, Y.L., Abbapour, K., Mosler, H., **Yang, H**. 2009. Economic impacts on farm households due to water reallocation in China's Chaobai watershed. *Agricultural Water Management*. 96: 883-891.

Liu, J., Williams, W., Wang, X., **Yang, H**. 2009. Using MODAWEC to generate daily weather data for the EPIC model. *Environmental Modeling and Software.* 24: 655-664.

Faramarzi, M., K. Abbaspour, R. Schulin, **H. Yang**. 2009. Modeling green and blue water resources in Iran. *Hydrological Processes*. 23(3): 486-501.

Liu, J.G., Fritz, S., van Wesenbeeck, C.F.A., Fuchs, M., You, L.Z., Obersteiner, M.,Yang, H., 2008. A spatially explicit assessment of current and future hotspots of hunger in Sub-Saharan Africa in the context of global change. *Global and Planetary Change*. 64: 222-235.

Liu, J.G., Savenije H.H.G., **Yang**, **H**., 2008. Food consumption patterns greatly affect water crisis. Correspondence letter. *Nature*. 454(24): 397.

Yang, J., Abbaspour K.C., Reichert P, and **Yang H**. 2008. Comparing different uncertainty analysis techniques in a SWAT application to Chaohe Basin in China. *Journal of Hydrology*. 358(1-2): 1-23.

Schuol, J. Abbaspour, K., **Yang, H**., Srinivasan, R., Zehnder, A.J.B., 2008. Modeling blue and green water availability in Africa. *Water Resources Research*. doi:10.1029/2007WR006609.

Schuol, J. Abbaspour, K, Srinivasan, R., **Yang, H**., 2008. Estimation of freshwater availability in the West African sub-continent using the SWAT hydrologic model, *Journal of Hydrology*. 352: 30-49.

Liu, J.G., Zehnder, A.J.B., **Yang, H**., 2008. Drops for crops: modeling crop water productivity on a global scale. *Global NEST Journal*. 10(3): 295-300.

Amini, M. Abbaspour, K., Berg, M., Winkel, L., Hug, S., Hoehn, E., **Yang,** H.,. Johnson, A. 2008. Statistical modeling of global geogenic arsenic contamination in groundwater. *Environmental Science and Technology*. 42(10): 3669-3675.

Yang, H., Jia, S.F. 2008. Meeting the basin closure of the Yellow River in China. *International Journal on Water Resources Development*. 24(2): 265-274.

Yang, H., Zehnder, A.J.B. 2007. Virtual water - an unfolding concept in integrated water resources management. *Water Resources Research.* 43, doi:10.1029/2007WR006048.

Yang, H., Wang, L., Zehnder, A.J.B. 2007. Water scarcity and food trade in the Southern and Eastern Mediterranean countries. *Food Policy*. 32: 585-605.

Yang, H., Abbaspour, K.C. 2007. An analysis of wastewater reuse potential in Beijing. *Desalination*. 212: 238-250.

Liu, J.G., Zehnder, A.J.B., **Yang, H**. 2007. Water scarcity, food security and virtual water trade in China. *Water International*. 32(1): 78-90.

Liu, J.G., Williams, J.R., Zehnder, A.J.B., **Yang, H**. 2007. GEPIC – modelling wheat yield and crop water productivity with high resolution on a global scale. *Agricultural Systems*. 94: 478-493.

Liu, J.G., Wiberg, D., Zehnder, A.J.B., **Yang, H**., 2007. Modeling the role of irrigation in winter wheat yield and crop water productivity in China. *Irrigation Science*. 26: 22-33.

Yang, J., Reichert, P, Abbaspour, K., **Yang, H**., 2007. Hydrological modeling of the Chaohe Basin in China: statistical model formulation and Bayesian inference. *Journal of Hydrology*. 340: 167-182.

Bluemling, B., **Yang, H**., C. Pahl-Wostl, 2007. Making water productivity operational - A concept of agricultural water productivity exemplified at a wheat–maize cropping pattern in the North China Plain. *Agricultural Water Management*, 91: 11-23.

Yang, H., L. Wang, A.J.B. Zehnder, and K. C. Abbaspour, 2006. 'Virtual water trade: an assessment of water use efficiency in the international food trade'. *Hydrology and Earth System Sciences*, 10, 443-454.

Jia, S.F., **Yang, H**., Zhang S.F., Wang, L., Xia, J., 2006. Industrial water use Kuznets Curve: evidence from industrialized countries and implications for developing countries. *Journal of Water Resources Planning and Management*, 132 (3): 183-191.

Yang, H. and Zehnder, A. J. B., 2005. The South-North Water Transfer Project in China: an analysis of water demand uncertainty and environmental objective in decision making. *Water International*. 30 (3): 339-349.

Liu, C.S., Chen, X., Liu, C.M., **Yang, H**., 2005. Virtual water trade: an alternative for solving water shortage and ensuring food security in China. *Resources Science* (in Chinese). No 2: 10-15.

Liu, C.S., Chen, X., Liu, C.M., **Yang, H**., 2005. On the percentage of water charges to disposable income and living expenditure in North China. *Journal of Economics of Water Resources* (In Chinese). No.2: 27-32.

Liu, C.S., Chen, X., Liu, C.M., **Yang, H**., 2005. Study on eco-environmental water use and demand of river basin. *Water Resources and Hydropower Engineering* (In Chinese). No.6: 17-21.

Liu, C.S., Chen, X., Liu, C.M., **Yang, H**., 2005. Review of foreign river basin water resources allocation models. *Journal of Hehai University* (Natural Sciences) (In Chinese). No. 5: 522-524.

Yang, H., 2004. Land conservation campaign, integrated management and local participation in China**.** *Geoforum.* 35: 507-518**.**

Liu, C.S.， Liu, C.M， Yang, H. 2004. Zoning for water resources management in the Haihe River Basin. *ACTA Geographica Sinica* (In Chinese), 59(3): 349-356.

Jia, S., Zhang, S., **Yang, H**., Xia, J., 2004. The relationship between industrial water use and economic development – water use Kuznets curve. *Journal of Natural Resources* (In Chinese), 19(3): 5-9.

Yang, H., Reichert, P., Abbaspour, K., and Zehnder, A. J. B., 2003. A water resources threshold and its implications for food security. *Environmental Science and Technology*. 37 (14): 3048-3054.

Yang, H., Zhang X. H. and Zehnder, A.J.B., 2003. Water scarcity, pricing mechanism and institutional reform in Northern China irrigated agriculture. *Agricultural Water Management*. 61: 143-161.

Zehnder, A.J.B., **Yang, H**. and Schertenleib, R., 2003 'Water issues: the need for actions at different levels'. *Aquatic Sciences*. 65: 1-20.

Jia, S., Zhang, S., Xia, J., Yang, H., 2003. Effect of economic structural adjustment on water saving. *Journal of Water Resources* (In Chinese), No.12, pp.111-118.

Yang, H. and Zehnder, A. J. B., 2002. Water endowments and virtual water trade. *Gaia*, No.4, pp.267-270.

Yang, H. and Zehnder, A.J.B., 2002. Water scarcity and food imports - with a case study for southern Mediterranean countries. *World Development*, 30 (8): 1413-1429.

Yang, H. and Zehnder, A.J.B., 2001. China's regional water scarcity and implications for grain supply and trade. *Environment and Planning A*, 33: 79-95.

Yang, H. and Li, X. B., 2000. 'Cultivated land and food supply in China. *Land Use Policy*, 17(2): 73-88.

Yang, H., 2000. A comparative analysis of China's permanent and temporary migration during the reform period. *International Journal of Social Economics*, 27(3): 172-193.
Yang, H., 1999. Growth of China's grain production 1978-1997: a disaggregate analysis. *World Development*, 27(12) 2137-2154.
Yang, H. and Zhang, X.H., 1999. Leaving the shadow of the big brothers: Hebei's changing economic relations with Beijing and Tianjin in China. *Asian Profile*, 27(6): 460-76.
Yang, H., 1998. Trends in China's regional grain production and their implications. *Agricultural Economics*, 19(3): 309-325.
Yang, H., 1998. Hebei: Development through economic integration. *Provincial China*, No.5, pp.18-31.
Yang, H., 1998. 'Can China feed itself vs how should China feed itself'. *China Newsletter*, No.136, pp.2-7.
Yang, H., 1998. Maize production in China: spatial distribution, output fluctuation and trade implication. *China Report*, 34(2): 213-229.
Yang, H., 1998. On the debate on China's ability to feed itself. *Economic Problems* (In Chinese). No.8, pp.24-27.
Yang, H., 1988. Agriculture in Denmark. *World Agriculture* (In Chinese). No.1, pp.53-55.

Book chapters

Yang, H., Liu, J.G., Xia, J., 2015. Water security- China perspective. In Paul Wosel, C., Vorosmaty, C. B , A., *Water Security*. In press.
Yang, H., Zhang, Z.Y., Shi, M.J., 2012. Impact of China's economic growth on its water resources - A regional and sectoral assessment. In Song, L.G. (ed). *China Update*. 309-328.
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Yang, H. Liu, G.L., Zehnder, A.J. B. Rockström, J. Ecosystem impacts of virtual water embodied in global trade of agricultural products. In Koellner, T (ed). 2011. *Ecosystem Services and Global Trade of Natural Resourc*es. Rouledge, London. pp.106-129.
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Liu, J.G., **Yang, H**., 2010. Global agricultural green and blue water consumptive uses and virtual water trade. In Martinez-Cortina, L., Garrido, A., Lopez-Gunn, E. (eds). *Re-thinking Water and Food Security*. CRC Press, Leiden, the Netherlands. pp.23-32.
Yang, H., Li, X. and Zhang, Y. 2004. Interactions of environment-economic forces in population migration - with a case study of three counties in northern China. In Unruh, J., Krol, M. and Kliot, N. (eds). *Environmental Change and Its Implications for Population Migration*. Kluwer Academic Publishers, the Netherlands. pp.267-288.
Yang, H., 2003. Water, environment and food security: a case study of the Haihe River basin in China. In Brebbia, C. A. River Basin Management II. WIT Press, Southampton, UK. pp.120-131.
Yang, H and Zhang, X., 2003. China's economy and trade. In Ji Xiaobin (ed). *Facts about China.* New England Publishing Associates, Connecticut. pp.257-298.
Yang, H., Abbaspour, K. and Zhang, Y. L., 2002. Desertification control and sandstorm mitigation in the area encircling Beijing - with a discussion on the application of Bayesian network and hydrological modelling. *Dynamic Monitoring, Forecasting and Evaluation of Soil Erosion, Watershed Management and Development, Desertification Control*. Proceedings of the

International Soil Conservation Organization Conference. Tsinghua University Press, Beijing. 5: 593-598.

Yang, H., Abbaspour, K. and Zehnder, A. J. B., 2001. An analysis of water scarcity-induced cereal grain import. In Ghassemi, F., McAleer, M., Oxley, M., and Scoccimarro, M. (eds). *Proceedings of International Congress on Modeling and Simulation*. The Modelling and Simulation Society of Australia and New Zealand Inc. pp. 1279-1284.

Yang, H. and Mok, H., 2000. Towards an employment-oriented social security assistance in Hong Kong. In H. Mok (ed), *Poverty and Social Development.* Asia Monitor Resource Centre and Hong Kong Social Security Society, pp.107-117.

Yang, H., 1999. 'Regional specialization and the development of commercial grain base areas in China'. In Andrew Watson and Christopher Findlay (eds), *Food Security and Economic Reform: The Challenges Facing China's Grain Marketing System*. Macmillan, pp.128-147.

Yang, H., 1999. Sources of productivity disparities in regional grain production in China. In Kalirajan, K. Wu Yanrui (eds). *Productivity and Growth in Chinese Agriculture*. Macmillan, pp.121-140.

Wu, Y. R. and **Yang, H**. 1999. Growth and productivity in China's agriculture: a review. In Kalirajan, K. and Wu Yanrui (eds). *Productivity and Growth in Chinese Agriculture*. Macmillan, pp.20-31.

Yang, H. 1999. Reform of state-owned enterprises: with a focus on the hinterland development. In Yu, Hebert, et al (eds), Conference Proceedings: Contemporary Chinese Economic Reform and Social Development, Hong Kong Baptist University Press, pp.65-76.

Yang, H., 1992. An analysis of grain yield changes and provincial disparities in the post-reform period in China. In Wu Yanrui and Zhang Xiaohe (eds). *Chinese Economy in Transition.* Australian National University Press, pp.62-76.

2. OTHER SCHOLARLY PUBLICATIONS

Luethi, C., Yang, H., 2015. Institutional settings and enabling environments. In Annette, J.C and Bretzler, A. (eds). Geogenic Contamination Handbook: Addressing arsenic and fluoride in drinking water. Eawag and WHO. http://www.eawag.ch/Wrq/Handbook/geogenic-contamination-handbook.pdf.

Johnson, A.C., Johnston, R., Ostervalder, L., …Yang, H., 2015. Case studies and applications. In Annette, J.C and Bretzler, A. (eds). Geogenic Contamination Handbook: Addressing arsenic and fluoride in drinking water. Eawag and WHO.

Lawford, R., Jiménez-Cisneros, B., **Yang, H**., 2015. Ensure availability and sustainable management of water and sanitation for all. In Stevance, A. et al., (eds). *Review of Targets for the Sustainable Development Goals: The Science Perspective.* Paris: International Council for Science (ICSU). page 35-38.

Yang, H. 2014. Governance challenges: the South-North water transfer project in China. *Water21*. October. 17-19.

Zhang, Z.Y., **Yang, H**., Shi, M.J., 2012. Sectoral and regional analysis of the impacts of china's international trade on its water resources and uses. In Zhang, G.P., Hoekstra, A.Y., Tickner, D., (eds). Solving the Water crisis: Common Action Towards a Sustainable Water Footprint. Value of Water Research Report Series No. 60. UNESCO-IHE. 29-38.

Wei, S.K. and **Yang, H**., 2009. Simulating water diversion and pollution reduction conflicts in river basin using the game theoretic models. *Proceedings of the 4th International Yellow River Forum on Ecological Civilization and River Ethics*. II. pp. 287-305.

Liu, J.G., Uvere, F., **Yang, H**., 2009. *GEPIC User Manuel* (version 1.0). Eawag. www.eawag.ch.

Yang, H., et al., 2009. Summary for Decision Makers of the East and South Asia and the Pacific Report. International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). http://www.agassessment.org.

Yang, H., et al., 2009. Agriculture at a Crossroad. Chapter 2. II: East and South Asia and the Pacific. International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). Island Press. Connecticut, NW.

Schneider, C., **Yang, H**., Charpentier, A., 2009. Wasser - ein kostbares Gut. Harvard Business Manager. December, pp.40-44.

Zhou, Y. **Yang., H**., 2008. Water stress, agricultural water transfer and social equity in the Chaobai watershed. *China Perspectives*. Magazine of The French Centre for Research on Contemporary China. Hong Kong. No.2: 47-57.

Yang, H., 2008. Hebei. In Staiger, B., Friedrich, S., Schütte, H. (eds), 2008. *Das Grosse China Lexikon.* WBG (Wissenschaftliche Buchgesellschaft), Darmstadt, Germany.

Liu, J.G., **Yang, H**., Zehnder, A.B.J. 2007. Simulation of crop water relations on large scales with high spatial resolutions. In Van Bers, C., Petry, D., Pahl-Wostl, C (eds.), 2007. *Global Assessments: Bridging Scales and Linking to Policy*. Report on the joint TIAS-GWSP workshop held at the University of Maryland University College, Adelphi, USA, 10-11 May 2007.

Liu, C.S., Liu, C.M., **Yang, H**., 2007. *Rational Allocation and Management of River Basin Water Resources*. Beijing: China Hydro-engineering Press.

Yang, H. and Jia, S.F., 2007. Where has the Yellow River water gone?. In Schumann, A. and Pahlow, M. *Reducing the Vulnerability of Societies to Water Related Risks at the Basin Scale*. International Association of Hydrological Sciences. IAHS Publication 317.

Yang, H., Wang, L., Abbaspour, K., Zehnder, A.J.B., 2006. Virtual water and the need for greater attention to rain-fed agriculture. *Water 21*, No.4, pp.14-15.

Yang, H. Virtual water trade. 2004. *Corporate Knights* (Canadian Magazine) (1): 10-11.

Yang, H., 1998. *Grain Market Reform in China: Global Implications* (one of the contributors). Technical Report of Australian Center for International Agricultural Research, No.43, June.

Yang, H., 1998. Should Hong Kong establish the minimum wage system? *Hong Kong Economic Journal*, 30 July, p.9.

Yang, H., 1998. A discussion on China's grain issue. *China Studies Report 97-98*, pp.17-19. Hong Kong Baptist University.

RESEARCH PROJECTS

2013-	Application of a spatially explicit bio-physical crop model to assess drought impact on crop yield and crop-drought vulnerability in Sub-Saharan Africa. Funded by SNF. Principal investigator.
2013-	Spatially explicit modeling of the water-food-environment-trade nexus in the context of agricultural intensification Eawag funding. Principal investigator.
2012-	Inter-sectoral Impact Model Inter-comparison Project (ISI-MIP). Funded by German Federal Ministry of Education and Research (BMBF). Principal investigator for the GEPIC modeling group.
2014	Assessment of ecological and socio-economic impacts of rangeland degradation by overgrazing and evaluation of mitigation options - a case study in Iran. Seed money of ETHZ. Co-Investigator.
2014	Improving the capacity and applicability of GIS-based EPIC crop model for the simulation of major processes of soil-crop dynamics under organic farming conditions. Ambassador Program of WFSC-ETHZ.
2014	Outsourcing water scarcity and pollution in China. Founded by the Swiss National Science Foundation short visitor grant.

2013	CMMCA-Application of bio-physical crop model and multi-criteria analysis tool for the assessment of crop water productivity and stakeholder preference for improving water resources management in southern Romania. Funded by Sciex-Swiss. Principal investigator.
2012	Analysis of water resources constraint to the economic growth in the Huang-Huai-Hai region in China Sino-Swiss Science and Technology Cooperation Program. Principal investigator.
2012-2014	Spatially explicit modeling of impacts of adaptive agronomic measures on crop water productivity and yields in the context of water scarcity and climate change in Sub-Saharan Africa. Funded by the Swiss National Science Foundation. Principal investigator.
2011- 2014	Restoring Rivers for Effective Catchment Management (REFORM) EU Project. Team member
2010	Analyses of interregional virtual water trade in China using the input-output model. Sino-Swiss Science and Technology Cooperation Program. Principal investigator.
2009-2014	Groundwater and Dependent Ecosystems: New Scientific and Technical Basis for Assessing Climate Change and Land-use Impacts on Groundwater Systems (GENESIS) EU project. Team member.
2009-2014	Building Capacity for a Black Sea Catchment Observation and Assessment System Supporting Sustainable Development (EnviroGrids) EU project. Team member
2009-2011	Determination of Environmental Flow Requirement and Its Safeguard Measures in the Wei River in China. Funded by the Swiss National Science Foundation and Sino-Swiss Science and Technology Cooperation Program. Principal investigator
2008-2011	Global agricultural green and blue water consumptive uses and virtual water flows in the context of water scarcity and climate change Funded by the Swiss National Science Foundation. Principal investigator
2006-2014	Water Resources Quality (WRQ) Funded by Eawag and various external funding. Team member In collaboration with universities, industries and NGOs in Ethiopia and Bangladesh. 2006-2008 Phase I: A global assessment of geogenic pollution of Arsenic and Fluoride in groundwater. 2008-2014 Phase II: An integrated assessment of mitigation options for Arsenic and Fluoride in groundwater. Case studies in Ethiopia and Bangladesh.
2006-2010	Assessment of regional water resources availability, water constraints to food production and implications for intra-country virtual water trade in Egypt'. Joint project with the National Centre of Water Research, Ministry of Water Resources and Irrigation in Egypt. Funded by the State Secretariat for Education and Research. Principal investigator
2004-2010	Feasibility assessment of the virtual water strategy in regional water resource management in Iran. Funded by the Swiss National Science Foundation. In collaboration with Isfahan Agricultural University in Iran. Principal investigator.
2006-2009	Global Earth Observation – benefit estimation: now, next and emerging (GEO-BENE). EU project. Coordinator of the Eawag team.

2001-2009 Water, environment, and food security: integration of economic and environmental objectives - a case study of the Haihe River Basin in China.
In collaboration with the Institute of Geographical Sciences and Natural Resource Research, the Chinese Academy of Sciences, and the University of Osnabbruck, Germany.
Co-principal investigator.
Sub-projects under the 'Haihe project':

- 2006-2008 Modelling of farmers' water use behaviour in the Chaobai Catchment in China.
  Founded by Eawag. Principal investigator
- 2003-2006 Application of SWAT model in water quality management
  Founded by Eawag.
  In collaboration with the Tianjin Environmental Protection Agency, China. Co-principal investigator.
- 2005-2006 Non-point Source Pollution Monitoring and Control in the Haihe River Basin in China
  Founded by NIDECO, ETHZ. Principal investigator.
  In collaboration with the Tsinghua University, China
- 2001-2002 Participatory water management in irrigation schemes in China
  Founded by Eawag. Principal investigator.
  In collaboration with the Center for Sustainable Agricultural Development, the Chinese Academy of Agricultural Sciences.

2005-2007 An integrated assessment of environmental impacts of mining activities in two selected catchments (upper Crisul Alb and Certej) in the Apuseni Mountains, Romania, and transboundary river pollution. ESTROM program.
Funded by the Swiss National Science Foundation. Principal investigator.

2004-2007 Water scarcity – its measurement and implications for virtual water import
Funded by the Swiss National Science Foundation. Principal investigator.

2004-2007 Grain for green' policy for integrated land-water resources management at the catchment level – With a case study for the Chaobai Catchment in China
Funded by Institute of Geographical Sciences and Natural Resource Research, the Chinese Academy of Sciences (IGSNRR, CAS).
In collaboration with IGSNRR, CAS. Co-principal investigator.

2003-2007 GIS-based hydrological modeling of global freshwater availability
Funded by the Swiss National Science Foundation. Team member.

2001-2003 An integrated analysis of water scarcity, food security and environmental sustainability for policy development.
Funded by AGS (Alliance for Global Sustainability). Co-principal investigator.
In collaboration with the University of Tokyo and Beijing Normal University.

1998-2000 Determination of an official poverty line in Hong Kong and the basic rates for social assistance benefits
Founded by the University Research Grant of Hong Kong Baptist University. Team member.

1997-1999 China's provinces in reform
Funded by the University of New South Wales-University of Technology, Sydney Joint Center for Research on Provincial China.

	Team member.
1994-1997	1) Grain marketing reforms in China: global implications; 2) China's grain supply and international grain trade: the potential for domestic supply response to grain marketing reform. Funded by the Australian Center for International Agricultural Research and the Australian Grains Research and Development Corporation. Team member.
1993	Poverty alleviation in China. Funded by the University Research Grant of the Flinders University of South Australia. Team member.

INTERNATIONAL EXPERIENCE AND COMMUNITY INVOLVEMENT

May 2015	Represent the Basel University in Milan Expo, 22, May, 2015. (Topic: 'How much water is available and how much water is needed for people?')
2015-	Associate Editor of Frontiers in Freshwater Science.
2012-	Member of Scientific Advisory Board of Stockholm Environmental Institute (SEI), Sweden.
2014-	Member of Working Group: Water scarcity assessment: methodology and application. Panta Rhei –Everything Flows. Change in Hydrology and Society IAHS Scientific Decade 2013-2022. www.iahs.info/pantarhei.
2012-2014	Expert Reviewer of the Working Group II Report: Climate Change 2013: Impacts, Adaptation, and Vulnerability. IPCC Assessment Report 5.
2006-2014	Scientific Steering Committee Member of the Global Water Systems Project (GWSP). GWSP was a 10-year program (2004-2014) under the ESSP (Earth System Science Partnership).
2012-	Member of Management Committee of the COST Action ES1106 (Assessment of EUROpean AGRIculture WATer use and trade under climate change (EURO-AGRIWAT)).
2011	International expert reviewer of the Global Environmental Outlook Assessment Report 5 (GEO-5) of the UNEP.
2011	Volunteer of the Planet Under Pressure Mentoring Scheme (which is aimed at guiding those requiring assistance with abstracts to submit to the conference organized by IGBP, IHDP, ESSP, WCRP, DIVERSITAS).
2011	Guest editor of the Special Issue of *Economic Systems Research* (ISI) on Input-Output model application in water use assessment and water management.
2011-	Member of the Competence Center for Global Food System, ETH Zurich.
Sep. 2010	Organization of a side event on the promotion of Arsenic Mitigation in Drinking Water at the Stockholm International Water Week, Sweden.
Feb. 2009	Invited expert to contribute to the development and evaluation of a commissioned report by the German Federal Ministry of Education on 'Future trends and research needs in water management'.
2008- Current	Scientific expert of the Water Footprint Network (http://www.waterfootprint.org). Representing Eawag in the Water Footprint Network
2010-2014	Member of the editorial board of journal South-North Water Transfer and Hydraulic Science and Technology (in Chinese).
2007-2011	Participant of the International Green and Blue Water Initiative (led by Stockholm International Water Institute).
2007-2011	Participant of the Global Catchment Initiative (led by Global Water Systems Project).
2006-2008	Member of the Water and Food Flagship Program, Alliance for Global Sustainability.

2005-2008	Guest lecturer, Graduate School of the Chinese Academy of Sciences.
2005-2008	Chapter Lead Author of the International Assessment of Agricultural Science and Technology for Development (IAASTD) (Chapter 2, East and Southeast Asia and Pacific Sub-global Assessment, Summary for Decision Makers for the ESAP Region, Summary for Decision Makers of the Global Report). IAASTD was commissioned by the World Bank and FAO.
Nov. 2007	Member of the Scientific Steering Committee of International Conference on Adaptive and Integrated Water Management: coping with complexity and uncertainty, Basel, Switzerland.
Jan. 2007	Co-organizer of the Workshop on Water and Food in China, held in Macau, China. In collaboration with Tokyo University and Macau University.
Aug. 2006	Co-chair of the Workshop 2: Water trade for local needs. Stockholm World Water Week. 22 August, Stockholm.
2006	Member of a Track Support Group for the track: Water Resources and River Basin Management. Topic: Economic instruments for water quality and quantity management. International Water Association (IWA).
2004-2005	Coordinator of the Eawag seminar series (Every Friday for the fall semester).
2004	Advanced visiting scholar of the Tsinghua University, China. Teaching and collaborative research on water and environmental management.
Aug. 2004	Foreign expert/consultant to the Qinghai Water and Hydraulic Engineering Bureau, China.
2002-2003	Guest lecturer of the course of 'Watershed Management' at the International Institute for Infrastructural, Hydraulic and Environment Engineering, (IHE-UNESCO), The Netherlands.
Mar. 2002	Guest lecturer of the Summer School of the Alliance for Global Sustainability (AGS)
Mar. 2001	Guest lecturer of the course of 'Water Politics in the Horn of Africa' in the Department of Politics, the University of Addis Ababa, Ethiopia.
1998-1999	Member of the Editorial Committee of the Asian Social Development book series, the Hong Kong Social Security Society.
1993	Postgraduate representative, Center for Asian Studies, the University of Adelaide.
1979-1983	Committee member of the Student Association, Department of Geography, Beijing Normal University. In charge of organizing social activities.

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- International Water Association, since 2003.
- American Geographic Association, since 1997.
- Member of International Society for Ecological Economics, since 2008.