

Liste der IMPETUS-Veröffentlichungen (ohne IMPETUS-Buch)

(3. Phase, Stand: 03/01/2014)

Working group Prof. Bollig:

Doevenspeck, Martin, 2006: Migration und Landkonflikte in Benin. Geographische Rundschau 58/10, 48-55.

Doevenspeck, Martin: The Thin Line Between Choice and Flight: Environment and Migration in Rural Benin. In: International Migration 49 Issue Supplement s1 , 2011, 50-68.

Working group Prof. Diekkrüger:

Bormann, H.; Breuer, L.; Giertz, S.; Huisman, J.A. & N.R. Viney (2009): Spatially explicit versus lumped models in catchment hydrology – experiences from two case studies. In: Baveye, P.C., Mysiak, J. & Laba, M. (Eds.): Uncertainties in Environmental Modelling and Consequences for Policy Making. Springer-Verlag, 3-26

Bossa, A.Y, Diekkrüger, B., Igué, A.M, Gaiser, T. (2012): Analyzing the effects of different soil databases on modeling of hydrological processes and sediment yield in Benin (West Africa). Geoderma 173-174 (2012) 61–74.

Bossa, A.Y., Diekkrüger, B., Giertz, S., Steup, G., Sintondji, L.O., Agbossou, E.K. & C. Hiepe (2012): Modeling the effects of changing crop patterns and management practices on N and P loads to surface and groundwater in a semi-humid catchment (West Africa). Agricultural Water Management, 115, 20– 37.

Bossa, A.Y. & B. Diekkrüger (2012): Estimating scale effects of catchment properties on modeling soil and water degradation. In : R. Seppelt, A.A. Voinov, S. Lange, D. Bankamp (Eds): International Environmental Modelling and Software Society (iEMSS), International Congress on Environmental Modelling and Software. Managing Resources of a Limited Planet: Pathways and Visions under Uncertainty, Sixth Biennial Meeting 2012, Leipzig, Germany. pp 2974-2981. <http://www.iemss.org/sites/iemss2012/proceedings.html>

Cornelissen, Th., Diekkrüger, B. & S. Giertz (2013): A Scenario-Based Assessment of Climate and Land-Use Change Impact on the Discharge of a Tropical Catchment (Térou River, Benin, West Africa) using a Multi- Model Ensemble. J o Hydrol- ogy, 498:221-236. Doi:10.1016/j.jhydrol.2013.06.016.

Diekkrüger, B., Busche, H. Klose, A., Klose, S., Rademacher, C. & O. Schulz (2012): Impact of Global Change on hydrology and soil degradation - scenario analysis for the semi-arid Drâa catchment (South Morocco). In: K.J. Bogardi, J. Leentvar & H.-P. Nachtnebel (Eds.): River basins and Change. GWSP and UNESCO-IHE. p 21-26, E-book available at http://www.gwsp.org/fileadmin/documents_news/GWSP_12_01_E-Lernbuch_Complete_RZ5.pdf

Diekkrüger, B. & C. Hiepe (2012): The role of modeling for integrated water resource management. In: Bormann, H. & I. Althoff (Ed.) Rural sanitation and watershed management in Latin America. Mitteilungen des Forschungsinstituts Wasser und Umwelt der Universität Siegen No. 3, p 63-78.

Enders, A. & B. Diekkrüger (2009): Development of a Spatial Decision Support Framework for IMPETUS project in West Africa. Information Technologies in En-

- vironmental Engineering Proceedings of the 4th International ICSC Symposium Thessaloniki, Greece, May 28-29, 2009, Springer Berlin Heidelberg, p.132-148
- Giertz, S., G. Steub & S. Schönbrodt (2012): Use and constraints on the use of inland valley ecosystems in central Benin: Results from an inland valley survey. *Erdkunde*, 66:239-253.
- Giertz, S. & B. Diekkrüger (2006): Evaluation of three different model concepts to simulate the rainfall-runoff process in a tropical headwater catchment in West Africa. *Geo-Öko*. 3-4:117-147
- Giertz, S., Diekkrüger, B. & B. Höllermann (2012): Impact of Global Change on water resources in the Quémé catchment, Benin. In: K.J. Bogardi, J. Leentvar & H.-P. Nachtnebel (Eds.): River basins and Change. GWSP and UNESCO-IHE. p. 34-40. E-book available at http://www.gwsp.org/fileadmin/documents_news/GWSP_12_01_E-Lernbuch_Complete_RZ5.pdf
- Giertz, S., Diekkrüger, B. & G. Steup (2006): Physically-based modelling of hydrological processes in a tropical headwater catchment in Benin (West Africa) – process representation and multi-criteria validation. *Hydrology & Earth System Sciences*, 10, p 829-847.
- Giertz, S., Diekkrüger, B., Jaeger, A. & M. Schopp (2006): An interdisciplinary scenario analysis to assess the water availability and water demand in the Upper Ouémé catchment in Benin. *Advances in Geosciences*. Vol. 9:3-13.
- Hiepe, C. & B. Diekkrüger (2007): Modelling soil erosion in a sub-humid tropical environment at the regional scale considering land use and climate change. *Proceedings of the 4th International SWAT conference*, UNESCO-IHE Institute for Water Education, Delft, The Netherlands. July 4-6, 2007. Available at <http://www.brc.tamus.edu/swat/4thswatconf/docs/4thConfProceedings.pdf>
- Höllermann, B.; Giertz, S. & B. Diekkrüger (2010): Benin 2025—Balancing Future Water Availability and Demand Using the WEAP ‘Water Evaluation and Planning’ System. In: *Water Resources Management*. Im Druck. Online verfügbar unter: <http://dx.doi.org/10.1007/s11269-010-9622-z>
- Höllermann, B.; Diekkrüger, B. & S. Giertz (2009): Bewertung der aktuellen und zukünftigen Wasserverfügbarkeit des Ouémé Einzugsgebiets (Benin, Westafrika) für ein integriertes Wasserressourcenmanagement mit Hilfe des Entscheidungsunterstützungsmodells WEAP. *Hydrologie und Wasserbewirtschaftung* 53, Heft 5, S. 305-315.
- Laudien, R., Thamm, H.-P., Giertz, S., Diekkrüger, B., and Bareth, G. (2006): Customizing ArcGIS for spatial decision support - Case study: Locating potential small water reservoirs in Benin.- *Proceedings of Spie* (Vol. 6421), *Geoinformatics 2006: Geospatial Information Technology*, Huayi Wu & Qing Zhu (Editors), 64210KY, ISSN 0277-786X, ISBN 0-8194-6530-5, 28-29.10.2006, Wuhan, China.

Working group Prof. Fink:

- Born, K., A. H. Fink, and H. Paeth, 2008: Dry and Wet Periods in the Northwestern Maghreb for Present Day and Future Climate Conditions. *Met. Zeitschrift*, 17 (5), 533-551, DOI: 10.1127/0941-2948/2008/0313.
- Christoph, M, A. Fink, B. Diekkrüger, S. Giertz, B. Reichert and P. Speth, 2008: IM-PETUS: Implementing HELP in the Upper Ouémé Basin. *Water SA*, 34(4), 481-489 (HELP Special Issue).

- Christoph C., A. H. Fink, B. Diekkrüger, H. Goldbach, T. Heckelei, B. Reichert, M. Rössler, and P. Speth, 2011: Effizienter und tragfähiger Umgang mit Süßwasser anhand zweier Fallbeispiele in Nordwest- bzw. Westafrika (Chapter 4.4, in German). In: Lozán, J. L., H. Graßl, L. Karbe, P. Hupfer, and C.-D. Schönwiese (Eds.). WARNSIGNAL KLIMA: Genug Wasser für alle? 3. Edition (e-book only), p. 473-480, http://www.climate-service-center.de/imperia/md/content/csc/warnsignal_klima/warnsignal_klima_kap4_4.4_christoph.pdf.
- Ermert V., A. H. Fink, A. Jones and A. P. Morse, 2011b: Development of a new version of the Liverpool Malaria Model: II. Calibration and validation for West Africa. *Malaria Journal*, 10:62, <http://www.malariajournal.com/content/pdf/1475-2875-10-62.pdf>.
- Ermert V., A. H. Fink, A. Jones und A. P. Morse, 2011a: Development of a new version of the Liverpool Malaria Model. I. Refining the parameter settings and mathematical formulation of basic processes based on a literature review. *Malaria Journal*, 10:35, <http://www.malariajournal.com/content/pdf/1475-2875-10-35.pdf>.
- Ermert V., A. H. Fink, A. P. Morse, and H. Paeth, 2011: The Impact of Regional Climate Change due to Greenhouse Forcing and Land-Use Changes on Malaria Risk in Tropical Africa. *Environ. Health Perspect.*, 120, 77-84, doi:10.1289/ehp.1103681, <http://dx.doi.org/10.1289/ehp.1103681>.
- Ermert, V., A. H. Fink, and H. Paeth, 2013: Revisiting the potential effects of climate change on malaria transmission in Africa using regionalised climate projections. *Climatic Change*, 120, 741-754 10.1007/s10584-013-0851-z, <http://link.springer.com/article/10.1007%2Fs10584-013-0851-z>.
- Fink, A. H., D. G. Vincent, and V. Ermert, 2006: Rainfall Types in the West African Soudanian Zone during the Summer Monsoon 2002. *Mon. Wea. Rev.*, 134 (8), 2143-2164.
- Fink, A.H, 2006: The West African Monsoon. *promet*, 32(3), 114-122 (In German, English abstract).
- Knippertz, P. and A. H. Fink, 2006: Tropical plumes: A visible sign of tropical-extratropical interactions. *promet*, 32(3), 144-153 (In German, English abstract).
- Knippertz, P. and A. H. Fink, 2008: Dry-Season Precipitation in Tropical West Africa and its Relation to Forcing from the Extratropics. *Mon. Wea. Rev.*, 136 (9), 3579–3596.
- Knippertz P. and A. H. Fink, 2009: Prediction of Dry-Season Precipitation in Tropical West Africa and its Relation to Forcing from the Extratropics *Wea. Forecasting*, 24 (4), 1064–1084.
- Knippertz P., A. H. Fink, R. Schuster, J. Trentmann, and C. Yorke, 2011: Ultra-Low Clouds over the Southern West African Monsoon Region. *Geophys. Res. Lett.*, 38, L21808, doi:10.1029/2011GL049278.
- Paeth, H. and Thamm, H.-P. (2007): Regional modelling of future African climate including greenhouse warming and land degradation. – In: *Climatic Change* 83, 401-427.
- Paeth, H.; Scholten, A.; Friederichs, P. and Hense, A. (2008a): Uncertainties in climate change prediction: El Niño-Southern Oscillation and monsoons. – In: *Global and Planetary Change* 60, 265-288.
- Paeth, H., Capo-Chichi, A. and Endlicher, W. (2008c): Climate change and food security in tropical West Africa. – In: *Erdkunde* 62, 101-115.

- Paeth, H. (2008): Understanding the mechanism of land-cover related climate change in the low latitudes. – In: Mausam 59, 297-312.
- Paeth, H., Born, K., Girmes, R., Podzun, R. and Jacob, D. (2009): Regional climate change in tropical Africa under greenhouse forcing and land-use changes. – In: J. Climate 22, 114-132.
- Paeth, H. (2011): Postprocessing of simulated precipitation for impact studies in West Africa – Part I: model output statistics for monthly data. – In: Climate Dynamics 36, 1321-1336.
- Paeth, H. and Diederich, M. (2011): Postprocessing of simulated precipitation for impact studies in West Africa – Part II: a weather generator for daily data. – In: Climate Dynamics 36, 1337-1348.
- Paeth, H. Fink, A., Keis, F., Mächel, H. and Samimi, C. (2010a): Meteorological characteristics and potential causes of the 2007 flood in sub-Saharan Africa. – In: Int. J. Climatol., doi:10.1002/joc.2199.
- Paeth H., N. M. J. Hall, M. A. Gartner, M . D. Alonso, S. Moumouni, J. Polcher, P. M. Ruti, A. H. Fink, M. Gosset, T. Lebel, A. T. Gaye, D. P. Rowell, W. Moufouma-Okia, D. Jakob, B. Rockel, F. Giorgi, and M. Rummukainen (2011): Progress in regional downscaling of West African precipitation. Atmos. Sci. Let., 12, 75–82, DOI: 10.1002/asl.306.
- <http://onlinelibrary.wiley.com/doi/10.1002/asl.306/pdf>.
- Schrage, J. M. and A. H. Fink, 2007: Use of a Rain Gage Network to Infer the Influence of Environmental Factors on the Propagation of Quasi-Linear Convective Systems in West Africa. Wea. Forecasting, 22 (5), 1016–1030.
- Schrage, J. M., A. H. Fink, V. Ermert, and E. D. Ahlonsou, 2006: Three MCS Cases Occurring in Different Synoptic Environments in the Sub-Sahelian Wet Zone during the 2002 West African Monsoon. J. Atmos. Sci., 63 (9), 2369-2382.
- Schrage, J. M. and A. H. Fink, 2012: Nocturnal continental low-level stratus over tropical West Africa: Observations and possible mechanisms controlling its onset. *Monthly Weather Review*, 140 (6) 1794-1809, DOI: 10.1175/MWR-D-11-00172.1, <http://journals.ametsoc.org/doi/pdf/10.1175/MWR-D-11-00172.1>.
- Schuster, R., A. Fink, and P. Knippertz, 2013: Formation and maintenance of nocturnal low-level stratus over the southern West African monsoon region during AMMA 2006. J. Atmos. Sci., 70 (8), 2337-2355, doi:10.1175/JAS-D-12-0241.1.

Working group Prof. Heckelei:

- Gruber, I., Kloos, J. und Schopp, M. (2009): Seasonal water demand in Benin's agriculture, Journal of Environmental Management, Band 90 (1), S. 196-205
- Heidecke, C., Heckelei, T., 2010: Impacts of changing water inflow distributions on irrigation and farm income along the Drâa River in Morocco. Agricultural Economics 41: 135-146.
- Heidecke, C., Kuhn, A., Klose, S., 2008: Water pricing options for the Middle Drâa River Basin in Morocco. African Journal of Agricultural and Resource Economics, 2 (2): 170-187.
- Heidecke, C., Kuhn, A., 2006: Simulating groundwater charges for the Moroccan Drâa River Basin. Journal of Agriculture and Marine Science, Oman, 11(1): 47-54.
- Heidecke, C., Kuhn, A., 2007: Considering salinity effects on crop yields in hydro-economic modelling- the case of a semi-arid river basin in Morocco. In: Brebbia, C.A, Kungolos, A. (eds.): Water Resources Management IV. WIT press: 63- 72.

Kuhn, Arnim; Thomas Gaiser and Esaïe Gandonou, 2010: "Simulating the effects of tax exemptions on fertiliser use in Benin by linking biophysical and economic models", Agricultural Systems, Volume 103, Issue 8, October 2010, Pages 509-520

Working group Prof. Kerschgens:

Haas, R. and K. Born, 2011: Probabilistic downscaling of precipitation data in a subtropical mountain area: a two-step approach. *Nonlin. Processes Geophys.*, 18, 223-234, doi:10.5194/npg-18-223-2011.

Hübener H, Kerschgens M, 2007: Downscaling of current and future rainfall climatologies for southern Morocco. Part I: Downscaling method and current climatology. *Int. J. Climatol.*, 27, 1763–1774, DOI: 10.1002/joc.1491.

Hübener H, Kerschgens M, 2007: Downscaling of current and future rainfall climatologies for southern Morocco. Part II: Climate change signals. *Int. J. Climatol.*, 27, 1065–1073, DOI 10.1002/joc.1457.

Hübener H, Born K, Kerschgens M, 2007: Downscaling heavy rainfall in the subtropics - A simple approach for dynamical nesting. *Advances in Geophysics*, 10, 9-16.

Working group Prof. Rössler:

Kirscht, H. & M. Finckh (2008): The Incongruity of Territorial Perceptions as an Obstacle to Resource Management in Communal Land -Southern Morocco. Mountain Forum Bulletin, Volume VIII Issue 2: 11-13.

Working group Goldbach/Gaiser

Dagbenonbakin, G., Srivastava, A., Gaiser, T., Goldbach, H. (2012): Diagnosis and Recommendation Integrated system: A tool for detecting nutrient deficiencies in Yam (*Dioscorea rotundata*). *J. Plant Nutr.* 35(14), 2124-2134. DOI:10.1080/01904167.2012.724492

Dagbenonbakin, G., Srivastava, A., Gaiser, T., Goldbach, H. (2013): Maize nutrient assessment in Benin Republic: Case of Upper Ouémé Catchment. *J. Plant Nutr.* 36: 587-606.

Folbert, C., Gaiser, T., Abbaspour, K.C., Schulin, R., Yang, H. (2012): Regionalization of a large-scale crop growth model for sub-Saharan Africa: model setup, evaluation, and estimation of maize yields. *Agric. Ecosyst. Environ.* 151:21-33.

Gaiser, T., De Barros, I., Sereke, F., Lange, F.-M. (2009): Validation and reliability of the EPIC model to simulate maize production in small-holder farming systems in tropical sub-humid West Africa and semi-arid Brazil. *Agric. Ecosyst. Environ.* 135:318-327. 10.1016/j.agee.2009.10.014

Gaiser, T., Hiepe, C., Judex, M., Kuhn, A. (2010): Regional simulation of maize production in tropical savanna fallow systems as affected by fallow availability *Agric. Syst.*, 103:656-665. doi:10.1016/j.aggsy.2010.08.004

Gaiser, T., Judex, M., Igue, A.M., Paeth, H., Hiepe, H. (2011): Future productivity of fallow systems in Sub-Saharan Africa: Is the effect of demographic pressure and

- fallow reduction more significant than climate change? Agricultural and Forest Meteorology, 151:1120-1130 (DOI: 10.1016/j.agrformet.2011.03.015).
- Gaiser, T., Stahr, K., Bernard, M., Kang, B.T. (2012): Changes in soil organic matter fractions in a tropical Acrisol as influenced by the addition of different residue materials. Agroforestry Systems 86: 185-195.
- Hounsom, M., Ahamidé, B., Agbossou K. E., Gaiser T. (2011) : Evaluation of water quality in the Ouémé river (Bénin). [Environmentalist](#), 31:407-415. DOI : [10.1007/s10669-011-9356-3](https://doi.org/10.1007/s10669-011-9356-3).
- Igue, A.M., Houndagba, C. J., Gaiser, T., Worou, R., Mensah, G.A., Stahr, K. (2010): Aspects de la dynamique de l'occupation du sol et du projet d'aménagement participatif de la forêt classée de Touï-Kilibo au Bénin. Rev. Sc. Env. Univ. Lomé 6:113-134.
- Srivastava, A., Gaiser, T. (2008): Biomass Production and Partitioning pattern of Yam (*Dioscorea rotundata*). Agricultural Journal 3:334-337.
- Srivastava, A., Dagbenonbakin, G., Gaiser, T. (2010): Effect of fertilization on Yam (*Dioscorea rotundata*) biomass production. J. Plant Nutr. 33: 1056-1065.
- Srivastava, A., Kaninnkpo, C., Gaiser, T. (2009): Response of lowland rice to bunding and fertilization at different slope positions. Agric. J. 4:226-230. <http://dx.doi.org/10.3923/aj.2009.226.230>
- Srivastava, A., Gaiser , T. (2010): Simulating biomass accumulation and yield of yam (*Dioscorea alata*) in the Upper Ouémé Basin (Benin Republic) – I. Compilation of physiological parameters and calibration at the field scale. Field Crops Research 116:23-29. <http://dx.doi.org/10.1016/j.fcr.2009.10.018>
- Srivastava, A., Gaiser , T., Ewert, F. (2012): The impact of climate change on Yam (*Dioscorea spp.*) yield in relation to major soil types in the Upper Ouémé Basin (West Africa). Agric. Ecosyst. Environ. 153, 57-64
- Srivastava, A., Gaiser , T., Ewert, F., Cornet, D. (2012): Estimation of effective fallow availability for the prediction of yam productivity at the regional scale using multiple scenario analysis. Field Crops Research 131, 32-39.
- Worou O. N. , Gaiser, T., Kazuki, S., Goldbach H., Ewert, F. (2012): Simulation of soil water dynamics and rice crop growth as affected by bunding and fertilizer application in inland valley systems of West Africa. Agric. Ecosyst. Environ. 162:24-35.
- Worou, O.N., T. Gaiser, S. Kazuki, H. Goldbach, F. Ewert, 2013. Spatio-temporal dynamics of constraints on rainfed rice yield and growth in West African inland valleys. Agricultural Water Management 126, 119-124. DOI:[10.1016/j.agwat.2013.04.007](https://doi.org/10.1016/j.agwat.2013.04.007).

Working group Linstaedter

- Martin, R., B. Müller, A. Linstädter, K. Frank, 2013: How much climate change can pastoral livelihoods tolerate? Modelling rangeland use and evaluating risk. Global Environmental Change, <http://dx.doi.org/10.1016/j.gloenvcha.2013.09.009>.
- Linstädter A., Kemmerling B., Baumann G. and H. Kirscht, 2013: The importance of being reliable e Local ecological knowledge and management of forage plants in a dryland pastoral system (Morocco). J. Arid Environ., 95, 30-40.

Linstädter A. and G. Baumann, 2013: Abiotic and biotic recovery pathways of arid rangelands: Lessons from the High Atlas Mountains, Morocco. *Catena*, 103, 3–15.

Regional hydrogeology and groundwater budget modeling in the arid Middle Drâa Catchment (South-Morocco)