

Water-energy-food nexus and security for sustainability

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Water-energy-food nexus and security in Asia-Pacific region is analyzed based on national scale in terms of self-sufficiency and diversity of resources use. Energy footprints as energy consumptions for water transports/productions and energy consumptions for food productions are also analyzed as nexus, as well as food consumptions for energy production in Asia-Pacific region. Water footprints are mainly calculated for only water consumptions for food productions, however another water footprints as water consumptions for energy productions are also analyzed as nexus in the Asia Pacific region. Among the various water-energy-food nexus, different type of nexus exist such as tradeoff, interaction, and synergy, depending on the change in quantity and quality of resources, with difference of environment impacts. Top-down indices (e.g. water/energy footprints) should meet bottom-up local context (value, culture etc.) to make sense and be applicable for sustainability.

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