

Sustainable Phosphorus Management from a Cross-National Perspective

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(1) Introduction

(2) Legal comparison



- (a) International Agreements / Fundamental Rights*
- (b) Constitutional anchoring of resource protection*
- (c) National environmental & agricultural legislation*
- (d) Subsidies – role of the European CAP*

(3) Conclusions

Peninsula de Osa, Costa Rica; Source: own picture, September 2016

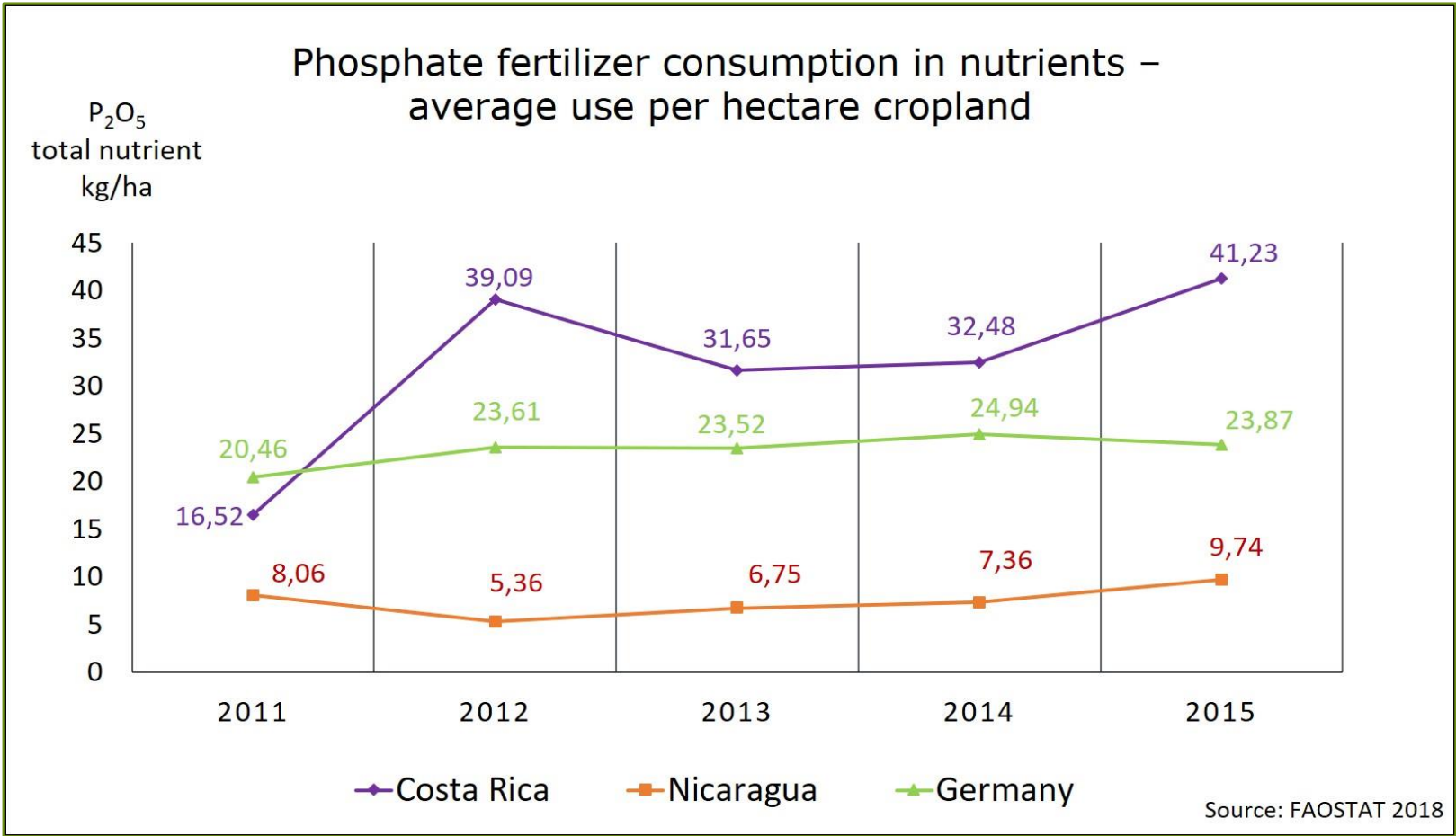
Developing Country (NIC) / Emerging Economy (CR) / Industrial Country (DE)



Source: 2017 Google, ORION-ME



(1) Dependency on mineral P:



(1) Agricultural sectors - key characteristics:

- ❖ Highly **centralized, globalized** and **specialized** food and fertilizer markets exist.
- (1) A rising tendency to a further **intensification** and **specialization** in agriculture and **larger** agricultural holdings can be observed in all three countries.
- (2) Great importance is attached to the **export** economy, that is often coupled with **monocultural**, high input farming systems.
- (3) Circular economy in agriculture is barely implemented, instead the agricultural sector contributes excessively high to biodiversity loss and global climate change.

→ **The factual circumstances are opposed to the key issues for sustainable land and P use in the future / the SDGs!**



International legislation – binding agreements

- ❖ Art. 2 para. 1 (a) PA (Paris Agreement - limit global warming “well below 2° C”)
- ❖ Art. 1 CBD (Conservation of Biological Diversity – Aichi Biodiversity Targets)
- ❖ Art. 2 UNCCD (United Nations Convention to Combat Desertification)

Human Rights that oblige to protect resources and the environment

- Universal Declaration of Human Rights (UDHR) → International Covenant on Civil and Political Rights (ICCPR) and on Economic, Social and Cultural Rights (ICESCR)
 - ❖ Art. 6 (1) ICCPR – Right to life
 - ❖ Art. 12 ICESCR – Right to physical integrity / health
 - ❖ Art. 11 ICESCR – Right to an adequate standard of living
 - ❖ Art. 11 ICESCR – Right to food (and water)

Constitutional anchoring of environmental and resource protection law



- ❖ Art. 37 CFR, Art. 191 TFEU – *objective* of prudent and rational utilisation of natural resources
- ❖ Art. 20a GG – *objective* to protect the natural foundations of life; subjective and legally enforceable rights cannot be derived



- ❖ Art. 50 CR Constitution – right to a healthy and ecologically balanced environment, combined with the right to bring actions before the CR Environmental Court

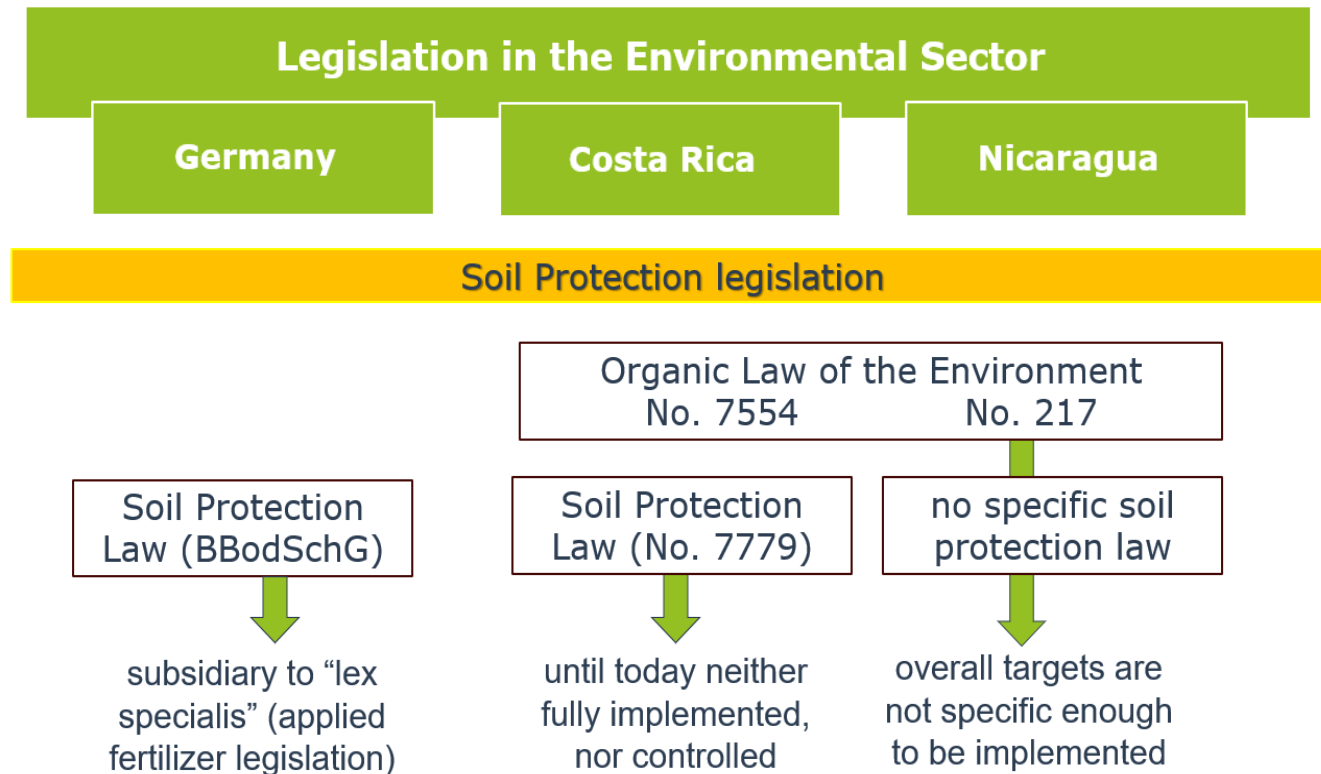


- ❖ Art. 60 NIC Constitution – right to a clean environment, duty to protect the environment and natural resources
- ❖ Art. 102 NIC Constitution obliges the state to protect natural resources and to use them rationally in the national interest

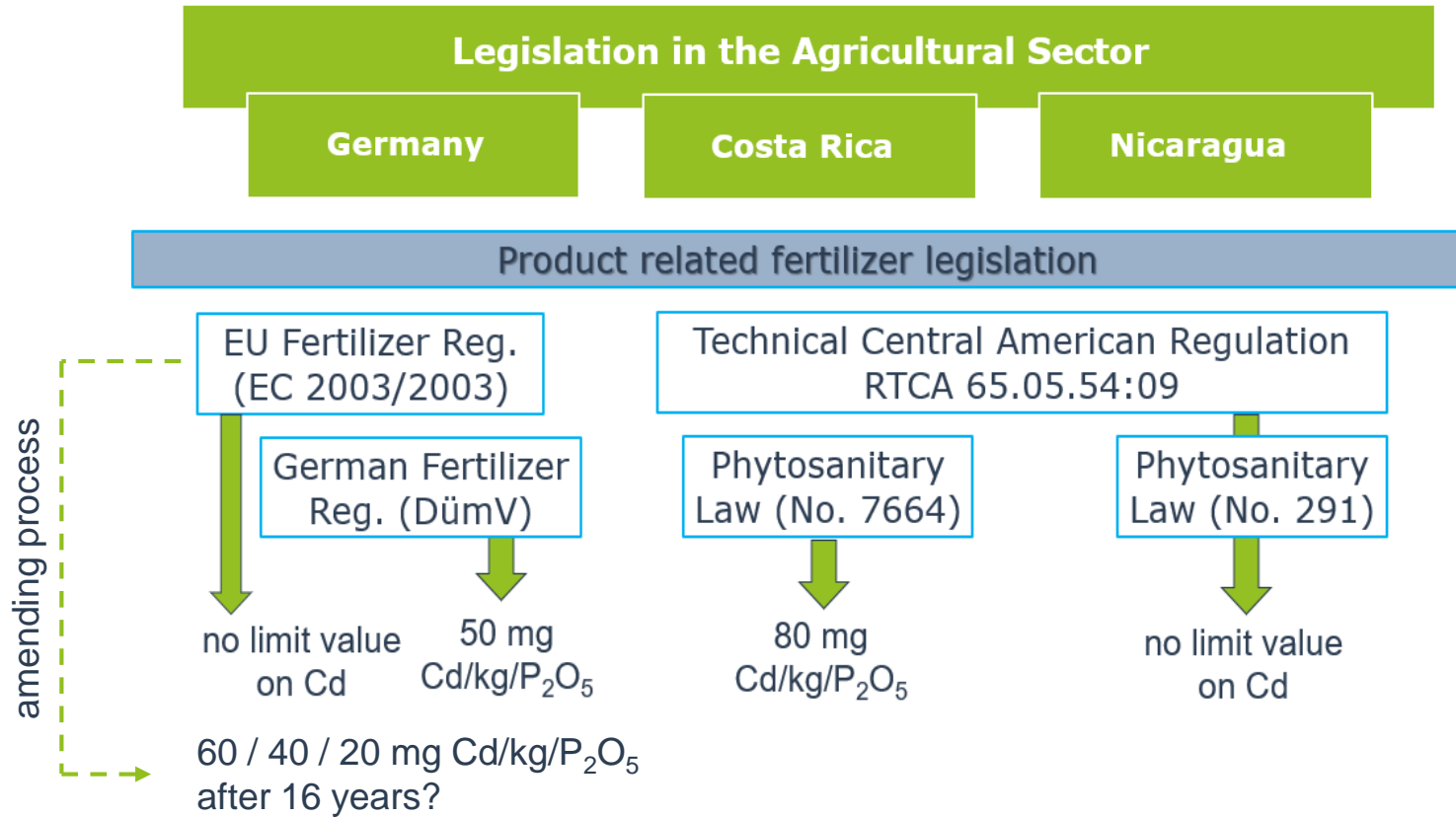
Supra- and national legislation – areas of law concerned



graphic: Garske/Stubenrauch



→ Soil protection is de facto **inadequate** in all three countries. Agricultural land use focused on economic productivity is privileged, disregarding the natural utilization potential and sensitivity of soils.



→ So far, the possibility of restricting the use of mineral P fertilizers and thus indirectly promote organic or recycled P fertilizers through strict limit values for Cd is missed.



Germany:

- § 3 (2) DüngG: *Good Agricultural Practice* → specified in § 3, 4 DüV
- § 3 (6) DüV: if P soil content exceeds 20 mg P/100g soil → fertilization has to be aligned with P uptake of plants
- soil sampling regarding soil P content every 6 years (§ 4 (4) No. 2 DüV)

Costa Rica/Nicaragua:

- voluntary certification for *Good Agricultural Practice* is possible
 - additionally, *inter alia*: GLOBAL.G.A.P. / Rainforest Alliance Certification
- The consistent implementation of voluntary certifications remains an open question – a **governance gap** exists.



(2) Legal comparison:



- Subsidies (~ 400 billion €) mainly paid for non sustainable agriculture systems → "environmentally-destructive model" + **market disturbing effects**

agri-environmental / climate payments (e.g. organic farming, Natura 2000)



- **so far legislation in all three countries have not yet found the right answers to the existing challenges with regard to sufficient food production as well as (P) resource and environmental protection**
- soil protection is inadequate in all three countries
- the product-related fertilizer legislation has so far missed the possibility of restricting the use of mineral P fertilizers, e.g. through strict limit values for Cd
- applied fertilizer legislation does not trigger necessary structural changes in agriculture
- existing structures are maintained (e.g. further specialization, instead of integrated crop-livestock systems, that are optimally adapted to site-specific conditions)
- frugality, i.e. more modest consumption patterns, have to be included in P governance as well to meet binding international targets (CBD/PA)
- structural deficits of command-and-control-law become evident (enforcement deficits, possible rebound & shifting effects)



- economic instruments as main instruments (cap on/ pricing of land use as such, livestock farming or fossil fuel use) might therefore be preferable

Thank you for your attention!

Further reading:

- ▶ Stubenrauch/Garske/Ekardt: Sustainable Land Use, Soil Protection and Phosphorus Management from a Cross-National Perspective, *Sustainability* **2018**, 10(6),1988; <https://doi.org/10.3390/su10061988>.
- ▶ Leinweber et. al.: Handling the Phosphorus Paradox, *Ambio* 2018.
- ▶ Garske/Douhaire/Ekardt: Ordnungsrechtliche Instrumente der Phosphor-Governance, *NuR* 40(2) 2018.
- ▶ Ekardt/Wieding/Garske/Stubenrauch: Landnutzungs- und düngungsbezogener Klimaschutz in europa- und völkerrechtlicher Perspektive, *ZUR* 3/2018.
- ▶ Ekardt/Garske/Stubenrauch/Wieding: Governance Instruments for Phosphorus Supply Security, *JEEPL*, 12/2015.