Regional capacity-building workshop on biodiversity and human health for the Europe Region - 23-25 October 2017, Helsinki, Finland

Some experiences from Belgium in integrating biodiversity and health issues in policy initiatives

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National Biodiversity Strategy: links with health: attention given to:

- Integration of biodiversity in other sectors
- Traditional medicines
- Soil productivity → food production → balanced diets
- Diversified agricultural surfaces → nutritional security
- Biodiversity disturbance → emergent diseases
- Encourage interdisciplinary research, educational programmes → raise awareness of links
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NEHAP: National coordinating cell + federal coordinating cell of the NEHAP (National Environment-Health Action Plan) in the FPS since 2003 = civil servants from environment and health departments, respectively from federal and regional, or federal alone, governance levels.

The national cell coordinates projects where federal and regional competences can join.

(NB: for environment: federal comp. = ~ voluntary import/export/transit ; regional comp. = on the territory)

In practice:

Challenge: to find the necessary budget for this project (in particular for mosquitoes monitoring Plan, including monitoring of vectors in addition to pre-existing monitoring of vectoral borne diseases)

Way to do: juridic & technical analysis → long discussions → proposal of monitoring plan by scientists → proposal of realistic plan by NEHAP national cell → adoption by CIMES (= Environment and Health Interministerial Commission) → 3 years pilot plan for feasibility study (MEMO project)
The Belgian NEHAP (National Health and Action Plan) is currently funding a 3-year project called monitoring of exotic mosquitoes in Belgium (MEMO) to prevent the establishment of exotic mosquitoes such as tiger mosquitoes in Belgium and consequently, to prevent related human diseases. At several possible Points of Entry (second hand tires import centers, lucky bamboo cultivating centers, airports, ports, international motorways, etc) and 2 known Points of Entry mosquitoes will be monitored.

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**MEMO** project:

Start of the project: 01/07/2017

1ᵉ press conference: 03/10/2017

“We are still learning ourselves and are hoping to learn from best practices from other member states. For this purpose, we invited **partners from neighboring countries** to join MEMO’s **guidance committee.**”
Nehap (3):  Project Melese:  (YN, with MLL & FTh, in Coordinating Cells of the NEHAP)

Project in developing e-learning modules for health professionals in environmental medicine.

14 modules to be developed in e-learning:

different topics such as endocrine disrupters, pesticides, cosmetics, Radon, indoor en outdoor air quality, specific approach pregnant women, mould, noise, electromagnetic waves,...

Modules should be available last trimester 2018
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One World – One Health concept adopted (end 2014: note - ~ 30 pages, > 100 references –, by LF, on Biodiversity & Health, One Health and related concepts → to Direction Committee of FPS → January 2016: One World – One Health concept in administrative contract between the FPS and the government).

In practice till now:

● Participation in organization (~ ½ financing; L. Flandroy = co-pilot) of European One Health/EcoHealth workshop, Brussels, October 2016

  Challenge: to respect the specific objectives/constraints of different stakeholders in trans-disciplinary working

● Inter-departemental (human health, animal health, environment) tackling (since 2017), in a One Health perspective, of the Antimicrobial Resistance issue (link with Environmental & internal « good » microbiome)

  ?Future challenge?: listen to and respect different visions/approaches of a problem and their respective plus-value in inter-disciplinary working

● Joint position for UNEA « Environment and Health Resolution »: OK for joined position between human health, animal health, environment departments, on theoretical aspects

● Reflections on links with SDGs (!! With adequate official competences repartition)
Main outcomes of EU. OH/EH workshop 2016, for OH/EH implementation:

**Broad meaning of OH to be adopted:** human & animal health + biodiversity & ecosystems health + soil health + food security & agri. systems + rural & urban dev. + climate change + benefits of biodiversity + social & cultural drivers. (NB: EH has ~ larger vision: environmental & socio-cultural dimensions more automatically included)

**Advantages** of OH approach: pro-activity, avoiding duplications → human + financial benefits

**Challenges:** to overcome vertical organization of public administrations; mutual respect; inter-and transdisciplinary education; criteria & indicators; public involvement.

**Tools:** iterative process (policy/science/field/NGOs/...), networking, avoid big OH new institutions, implicate private sector responsibility, start by easy case studies, listen to local knowledge

→ **network** suggested as follow-up at the end of specific sessions on:

1) Environment-Microbiome-Health axis
2) OH/EH education
3) Social science in OH/EH
BRAIN.be program of Belspo (federal public service for science policy programming) 2013/2014/2015:

Collaboration of depart. AMSZ (Multilateral and Strategic Affairs) in defining calls on:

Study the interlinkages and improve the interface between health (domestic animals, wildlife, plant and human health) and ecosystem integrity.

Precise objectives were defined, useful for federal related competences. Various related projects currently running.
PFDD3 (3rd Federal Plan for Sustainable Development):

Proposals of depart.AMSZ (Multilateral & Strategic Affairs), among other:

Analyze potential impact on public health of legal and illegal national trade of exotic animals and plants, as well as of bushmeat.
Bushmeat project (LF in AMSZ): genetic analysis of illegally imported meat → evaluate biodiversity risk (in situ: CITES endangered species; ex situ: pathogens & IAS towards endemics) and health risk (zoonoses)

Challenge:

● collab. with customs and food chain safety agency (responsability) → OK through patience & respect
● budget for analysis of health risk: no priority (no Ebola crisis presently; EU regulation n° 206/2009 is theoretically forbidding import of meat from outside the EU in passengers’ luggage) → ! in absence of concrete data (real figures of illegal trade) and of perceived risk (through analysis of potential linked pathogens) out of epidemics, legality umbrella can be synonymous of lack of priority for controls (facing lack of means, and more concrete risks perceived)

Way to do: wait for the quantitative and qualitative results of the genetic determination (biodiversity risk) to raise interest into the potential health risk (potential old & recently known linked pathogens) → importance of the preventive OH/EH perspective (link: environment disturbance → potential new pathogens and hosts → emergent diseases → potential world-wide diffusion
Picture by:

Dr. Anne-Lise Chaber
Federal public service Health, Food Ch. Safety & Envt - DG Envt

Invasive alien species (MI in AMSZ dept., and SV scientist in Belgian Biodiversity Platform):

EU regul. 1143/2014 c/ invasive alien species (prevention, rapid eradication, management).
BE federal competence for voluntary import. Regional competence for in situ establishment.
→ lead taken by our department for transposition to limit import.
Concrete fight against IAS implies risk assessment for environment, that previously existed.
In addition, new protocols Harmonia and Pandora (developed in Alien Alert project financed by BELSPO) now allow to evaluate risks in addition for public health, animal health, plant health.
Needed collaboration of environment + human health + animal health + plant health policy departments + related scientists.
Initially, health sector weakly collaborative (? Issue far from their usual interests?)
→ usefulness of biodiversity sector to attract attention on poorly tackled existing health problems
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Bees federal plan (SK in AMSZ): objective: care for domestic Bees health, essential for pollination, thus food production, thus basic human health (develop tools to better fight c/ bees diseases, better understand causes of mortality and establish monitoring, sensibilize, reinforce national coherence)

Challenge: better cooperation between bees keepers federations + animal health & pesticides departments of our ministry + animal drugs agency + national food chain safety agency

Way to do:

- federation, by our department, or other ones (having each a different limited approach of bees), around the ecosystem service notion of pollination (urgent and easily understood by the public).
- Federal task force created: fair repartition of tasks. Joined project to study multifactorial causes of bees death (NB: bees keepers, with useful local knowledge, more confident in Env. than Pesticides depart.)

→ Corollary: protection of wild bees (without official representatives) is gaining interest at the regional governance level (responsible for protection of wild biodiversity inside the country)
Endocrine disruptors (MR in Ch.P.A.): definition/criteria presently under discussion at the EU level.

Our DG Envt (depart. Chemical Products Agency) is managing the REACH legislation implementation (chemical products risk assessment includes direct environment risk, in particular for biodiversity species representative of phyla, direct health risk, indirect health risk through environment exposure. Thus, automatic integration of biodiversity and health concerns).

Challenge: integrate various environment and health perspectives (facing lobbies in conflict of interest).

Way to do:

- involvement of our DG Envt since the beginning of debate on endocrine disruptors at EU level →
- federation of other Belgian concerned departments (federal Medical Drugs Agency, involved in RA of medicines wastes; federal pesticides depart; regional depart. involved in norms of wastes in waters) by our DG.

→ commun minority Belgian position (on the basis of biodiversity/ecosystem services concerns) opposing the Commission proposal (!! To exclude all invertebrates – 80 % of living organisms - from RA of endocrine acting pesticides!!??...) ... !!! C.A. Hallman et al., Plos One, Oct. 2017: ~ 80 % \downarrow \downarrow insects \downarrow \downarrow biomass in Europe, in ~ 30 years
Environmental & internal microbiome (LF, in AMSZ, co-pilot of EU OH/EH workshop 2016; organizer & coordinator of Environmental & internal microbiome session):

- High biodiversity of humans’, animals’ and plants’ microbes ↔ good health
- Dysbiosis in humans and animals ↔ NCDs (non communicable diseases) with inflammatory symptoms. Experimental + effect of some microbial strains on concerned pathologies.

→ Microbial diversity = ecosystem service
- Constant exchange between humans’, animals’ and plants’ microbes → microbiota = interconnecting living network. Need for more research to precise links, impacts, determinants.

→ microbiome = potential leading element and health indicator connecting compartments of the ecosystem and their health, and thus policy compartments (health, environment, agriculture, nutrition, land planning,...) and several SDGs (SDGs 2, 3, 6, 11, 14, 15, ...)

→ proposal for European science-policy Environment-Microbiome-Health platform (outcome of EU OH/EH wkshp session): scientific review with BE and other EU MS experts particip.

in the session + contacts with EU Commission
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**Marine environment** (HV in Marine Milieu dept.): marine biodiversity (still scarcer), source of food, cumulates terrestrial and marine pollution → threat for human food security, thus health. Marine environment supposedly protected by international agreements. Marine products are under contamination norms for food products. Yet: insufficient link made between destruction of ocean biodiversity and food security/health

**Mercury** (DM, in Chem.Prod.Ag.) : *health impact*: serious development impairment of neurological system. Sources: coal, gold extraction, dental amalgames, electric lamps, thermometers and tensiometers, local antiseptics, vaccines preservatives. Persistant and far-reaching → whole marine food chain contamination. **Minamata Convention and UE regulation n° 2017/852** (+ other legislations – REACH, pesticides, food - contaminants, mercury-containing products) cover whole life cycle of the use and emission of the substance: reduction or phase out of sources/ processes/products → need for collaboration between various sectors → tackled in NEHAP and in CCPIE coordinating committees (see last slide)

NB: Initial risks for health assessed on basis of environmental consider.(persistence,..) Current biodiversity protection thanks to human health protection measures
Microplastics  (DP in dept. for Products Policy):

Our DG Envt (department « Products Policy ») is in charge of products norms for placing on the market. **Product norms** are based on direct risks for environment, direct risks for health, and risks for health through emissions of the products in the environment. Thus, **integration of biodiversity and health concerns.**

**Microplastics are found in various environments** (drinking waters, commercialized salts, ....) → bad for humans’ and other animals ‘ health, a.o. living in the oceans → new threat for oceans’ organisms health and thus biodiversity; at medium term, for human food security and health. (Microplastics can also accumulate/bundle up drainage, favoring floods and infectious diseases)

→ Collaboration, on the issue, from our **DG Environment with our DG involved in Nutrition and Food, and with a scientific team** to undertake a related study.

NB: Sectoral agreement in prep. (→ 2019) to suppress microplastics from cosmetics and bucco-dental products
Climate change (CC in Climate Change dept.): links and conferences are made on the interlinkage between:
- climate change and health
- climate change and biodiversity

Few direct links made, however, between climate change fight/adaptation/mitigation, and joined biodiversity & health (exception: conference in Bonn, Germany, June 2017: Biodiversity and Health in the face of Climate Change), including in our National Plan for Adaptation to Climate Change (biodiv. & health link made about invasive species at federal level, green and blue corridors at regional level)

Renewable energy good for environment, to replace fossil fuels’ pollution and global warming, but: trade-offs

Agrofuels (IC in Climate Change dept., + LF in AMSZ): trade-offs of soils between monocultures for agrofuels or fields for local food production and/or biodiversity rich environments
Renewable energy (2):
Natural wood and pellets heating: wood branches or pellets can generate high amounts of fine particules ( ? and gazes?) bad for the respiratory tract.

Circular Economy (NDS in Policy Products dept.):
Recycling of products is beneficial to limit the use of products issued from biodiversity. Trade-offs actually discussed for environmental advantage of recycling as energical or other products. But: products to be recycled can contain hazardous substances/additives potentially risky for the new use of the recycled product → health risk of the new products issued from the recycling till now poorly taken into account (Our depart. « Policy Products » does care ..... ).
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Private and other professional sectors sensitization (AMSZ dept.):
Encouragement for sustainable use and protection of biodiversity through:
Classes given to colleagues of Federal public Service Economy
Project with private small and medium enterprises
Development of biodiversity footprint (? and health impact) measurement methodology

Public sensitization: pluri-annual campaign in development around importance of biodiversity (dept AMSZ: Multilateral and Strategic Affairs, + Communication Dept).
Biodiversity & Health interlinkage will be part of it (? Among other through Bushmeat project results and Bees dissapearance problematic)
Strategy 2014-2019:

- Environment agenda linked to Development agenda (poverty reduction, without more pressure on environment)
- **Integration of Environment in** 4 key sectors for development, among which **Health** (vector borne diseases, medicinal plants, ...) and **Agriculture**. Sectorial aid for sustainable **Forests**. → ? introduction of biodiversity & health, One Health, concepts.
- **BE** policies coherence and complementarity
  → encourage production and consumption changes (!!? Energy policy of the EU for renewable energy)
  → fight against illegal trade (in particular of plants and animals)
Regional level: Brussels Region

« Green and blue network » (by employees of the Region and citizens projects).

Citizens projects sponsored by the Region:

> Community gardens, some with bees hives (including in Ψ depart. of hospitals)
> GASAPs (groups of citizens buying directly organic food from local Belgian farmers)
> Good Food projects (various initiatives for local sustainable agriculture and food)
> Sustainable neighborhoods (local improvement of nature, social, economic aspects)
> Peri-urban agriculture (valorizing old local vegetable species and varieties)

Water management by « nature-based solutions » (EGEB NGO + Universities + Royal Institute of Natural Science + citizens; with various sources of budget)

NB: projects mainly initiated by environmental departments. But easily understood by the public as being good for nature and health. Citizens mainly participes for social contacts (⇒ mental health)

! Very demanding in citizen’s personal time investment (written and concrete projects, reports, meetings, ...
Regional Level: Walloon Region

Natura 2000 sites to stop loss of biodiversity: ? Link with impacts on health could be reinforced ?

Department Environment-Health exists in the regional administration

Official support for organic agriculture since 2013: Plan stratégique pour le développement de l’agriculture biologique en Wallonie à l’horizon 2020. Biodiversity (a.o., attraction for pollinators) and health positive impacts are underlined. Diversity and local varieties are encouraged.

Regional level - Flemish Region → by Hans Keune

NB: Health is a competence of Belgian Communities rather than of Regions
Conclusions (1)

- Policy makers are making biodiversity and health interlinkage in various files, spontaneously (ex: bushmeat project, bees plan, ...) or through existing legislations (REACH, food and other product norms)

NB: The REACH regulation includes a Socio-Economic Assessment process (REACH SEA Committee) to evaluate Costs (anticipated economic impacts) and Benefits to the Health or the Environment of a planned regulatory measure. Nevertheless, the valuation (and monetarization) of the ENV/Health benefits might be underestimated, because are long-term in essence, and identification of (all) benefits are (till now) not (or poorly) demonstrable.

- Usefulness of the wide « ecosystem service » notion to federate around (examples: bees federal plan, endocrine disruptors, microbiome, ...). Usefulness of biodiversity/ecosystem disturbance studies to bring data encouraging preventive health (example: bushmeat project, invasive alien sp.)

- Useful to reinforce some biodiversity & health links for mutual benefices (pollution and overexploitation of water environments, climate change and b&h, environmental and internal microbiome, ...... )

- OK to collaborate without problem as long as theory. Problems when concrete issues of budgets, of repartition of tasks, responsabilities and recognition, of respective main concrete objectives
Conclusions (2)

● Potential trade-offs to be made between environment/biodiversity and health benefits (+ influence of lobbies being in conflict of interests....) → importance of awareness of these trade-offs to be made, and thus of good contacts between policy representatives of diverse interests (examples in: renewable energy, circular economy)

● Useful to initiate commun work around concrete cases to be solved, before « crisis » period, and so to start collaboration and mutual understanding to be ready when facing « crisis » (examples: endocrine disruptors, bees federal plan, bushmeat, invasive alien species, ...)

● Importance of personnality, diplomacy, of the federating person. Importance of fair repartition of tasks, responsabilities, recognition (examples: bees federal plan, endocrine disruptors debate)

● Usefulness of multidisciplinary/multisectoral policy platforms where ministers/cabinets, have to approve decisions that have been prepared by multidisciplinary civil servants and experts platforms. (example in Belgium: NEHAP coordinating cell – see slide 3-, CIMES – see slide 3-, CCPIE: Comité de coordination de la politique internationale de l’ environnement: members of ministerial Cabinets (federal and regional) concerned by environment, taking commun decisions on basis of arguments prepared by administrative experts. Sub-groups of CCPIE on various environmental sectors)
Thanks for your attention ..........

......Thanks to my colleagues with whom I could exchange on the concerned files/issues they deal with:

Claire Collin, Ivo Cluyts, Nancy Da Silva, Maud Istasse, Luc Janssens de Bisthoven, Salima Kempenaer, Micheline Le Long, Donatienne Monfort, Yseult Navez, Denis Pohl, Martine Röhl, Fabrice Thielen, Sonia Vanderhoeven, Herlinde Vanhoutte, Barbara Vincke, ...

(initials along the slides)