PARIS

LIEN DE LA VIGNE
VINELINK INTERNATIONAL

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Strategies for input reduction in viticulture: 1) Physiology and Disease Progression 2) Precision viticulture and new equipments

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(on behalf of the GT3 group of the future Sustainable Viticulture GIS)

Medium term Innovation will be Knowledge Intensive (vs. Knowledge Imbeded)

- A **sustainable** Input reduction will require **locally** adapted management and design : soil, climate, year, pest pressure, objectives (trade-offs).
- Replace inputs by knowledge based management

→ information on the agrosystem at various scales for « well established » pests and disease and process (eg. Water Stress)

→ a matter of tools and methods to collect these data and use them in vineyard conditions (see theme 2)

→ for production

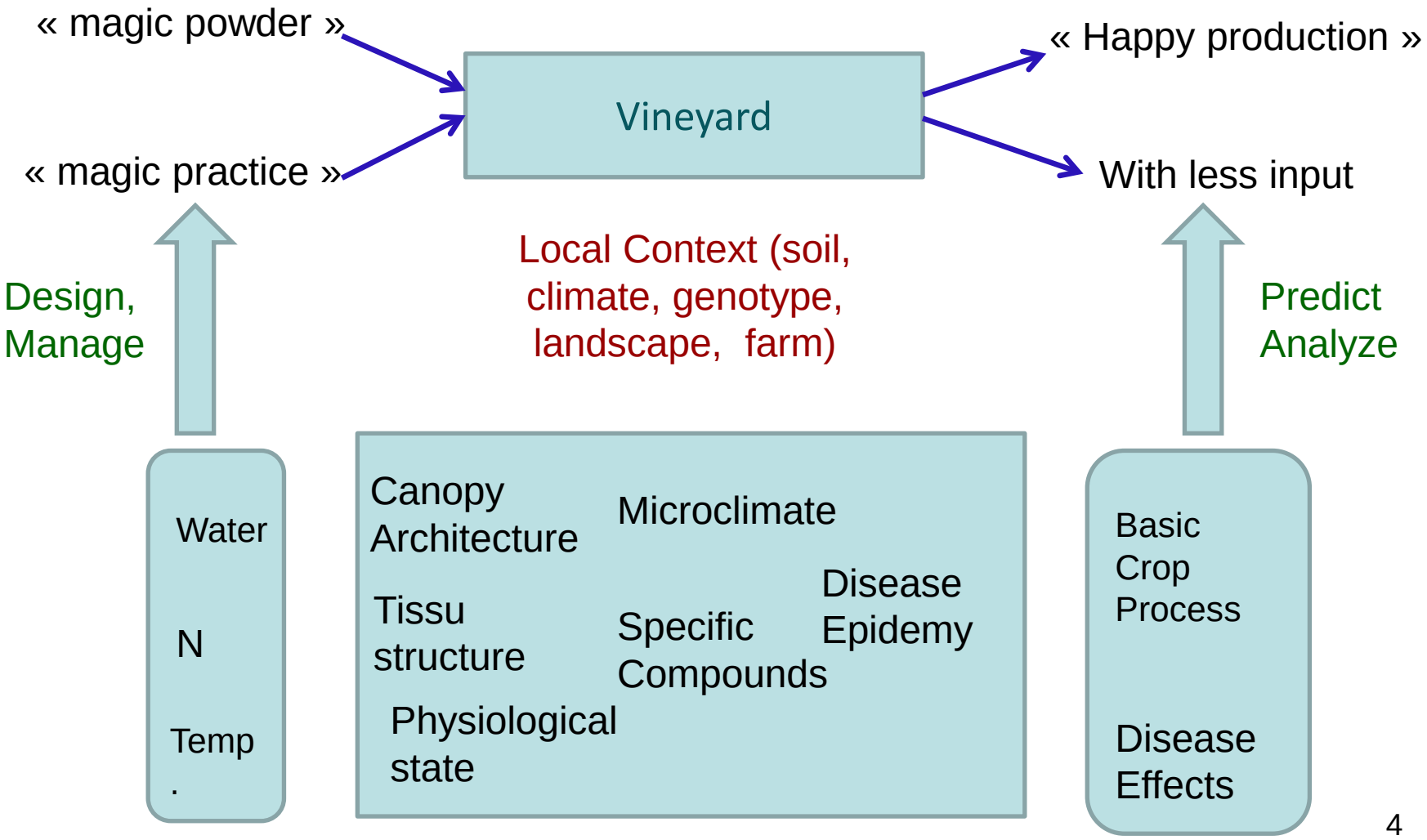
→ For experiments

- On emerging and « forgotten » disease its still a matter of basic knowledge

Innovation may be on the Emerging Properties of the systems (vs. on components)

- Replace « solve problem inputs » by « avoid problem systems »
- → create and manage vineyards less prone to disease and pests
- → « Open the black box » between pratices and properties
  - To derive generic knowledge on processes from local experiments
  - To identify indicators combining process relevance and operationnality in vineyards
  - To develop predictive models and spatial models for decision support or systems design
  - To cross the species and regions barrier

Open the black box to generate basic and operationnal knowledge on emerging properties



Four illustrations of research directions and approaches

- ***Plant architecture and powdery mildew resistance in relation to the physiological status of the plant***

  Agnès Calonnec (Inra, ISVV Bordeaux)

- ***Physiological factors and resistance:***

  Xavier Daire (Inra, Dijon)

- ***Geostatistic works on the epidemic progression of grapevine trunk diseases:***

  Jean-Pascal Goutouly (ISVV, Bordeaux)

- ***Sustainable management of epidemics and varietal resistances at the territory scale: The case of potato late blight:***

  Jean-Noël Aubertot (Inra Toulouse)

A concerted and transdisciplinary research effort is urgent for a sustainable innovation process !

« Since 2003, we have successfully tested the effect of specific sounnd sequences, based on results of the physicist Joël Sternheimer, on trunc disease (ESCA) and since 2009 on downy mildew ».

http://genodics.com/