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# Interactive design of landscapes

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# Introduction

- 1. Definition
- 2. External shocks
- 3. Two possible reactions
- 4. Supply of rural services
- 5. Landscape
- 6. RITA
- 7. Project ‘Friese meren’
- 8. Conclusions

# 4. Alternative landscape functions

- 1. Organic Production
- 2. Quality Production
- 3. Agro-tourism
- 4. Short chains
- 5. New Economic Activities
- 6. Diversification
- 7. Nature and Landscape Management
- 8. Cost Reduction
- 9. Off farm jobs
- 10. Care Farms

# 5. Landscape

- The landscape is the carrier (or substrate) of functions
- When the function changes the landscape also have to change and the other way round
- Rural resilience refers to the ability to adapt the landscape to changing circumstances
- Social capital is important

# 5. Landscape

- Landscape planning should be based on all the necessary information
- All necessary information is not available on the central level
- Therefore: interactive decentralised planning with the help of stakeholders is preferred

# 6. RITA

- "Regionaal Interactief Transdisciplinair Afwegingsmodel"
- 'Landscape Economics'

Two steps:

1. Maximising individual utility functions,
2. Aggregation of individual maxima

- Optimum landscape

# 6. RITA (Step 1)

$$\text{Max} \qquad U_s = U_s\left(x_1, x_2, x_3, ..., x_i, ...x_n\right),$$

S.T.

$$p_1 x_1 + p_2 x_2 + p_3 x_3 + ... + p_i x_i + ... + p_n x_n \leq B,$$

$$x_1 + x_2 + x_3 + ... + x_i + ... + x_n \leq C,$$

$$x_i \geq D_i, \quad \left(i \in \mathrm{I}^+\right)$$

$$x_i \leq E_i, \quad \left(i \in \mathrm{I}^-\right)$$

# 6. RITA (Step 2)

$$U = \sum_{s=1}^{m} \omega_s U_s, \qquad \sum_{s=1}^{m} \omega_s = 1.$$

- Establishing the functional form of the utility function and the weights are crucial

# Theoretical model

- m:\werk\ruimte\landscapeeconomics.xls

# 7. Project 'Friese meren'

Stakeholders:

- Government
- Nature Conservation Organisations
- Recreation Sector
- LTO
- Polder Board (Waterschap)

# 7. Project 'Friese meren'

Variables:

- Nature
- Water Quantity
- Bicycle Tracks
- Landing Stages
- Marina's
- Water Quality

- sels.doc

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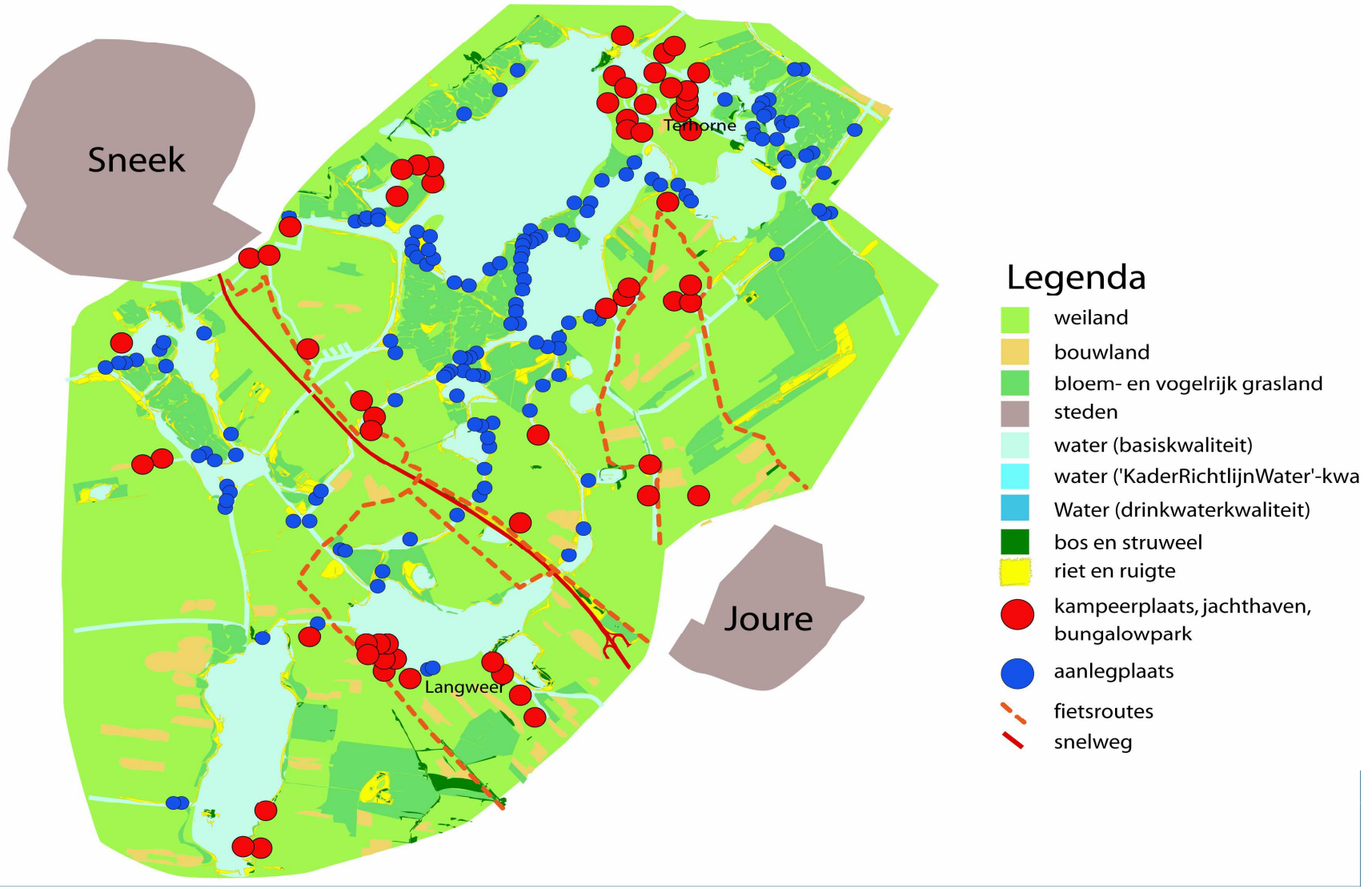
# ‘Friese Meren’-project: Present Situation



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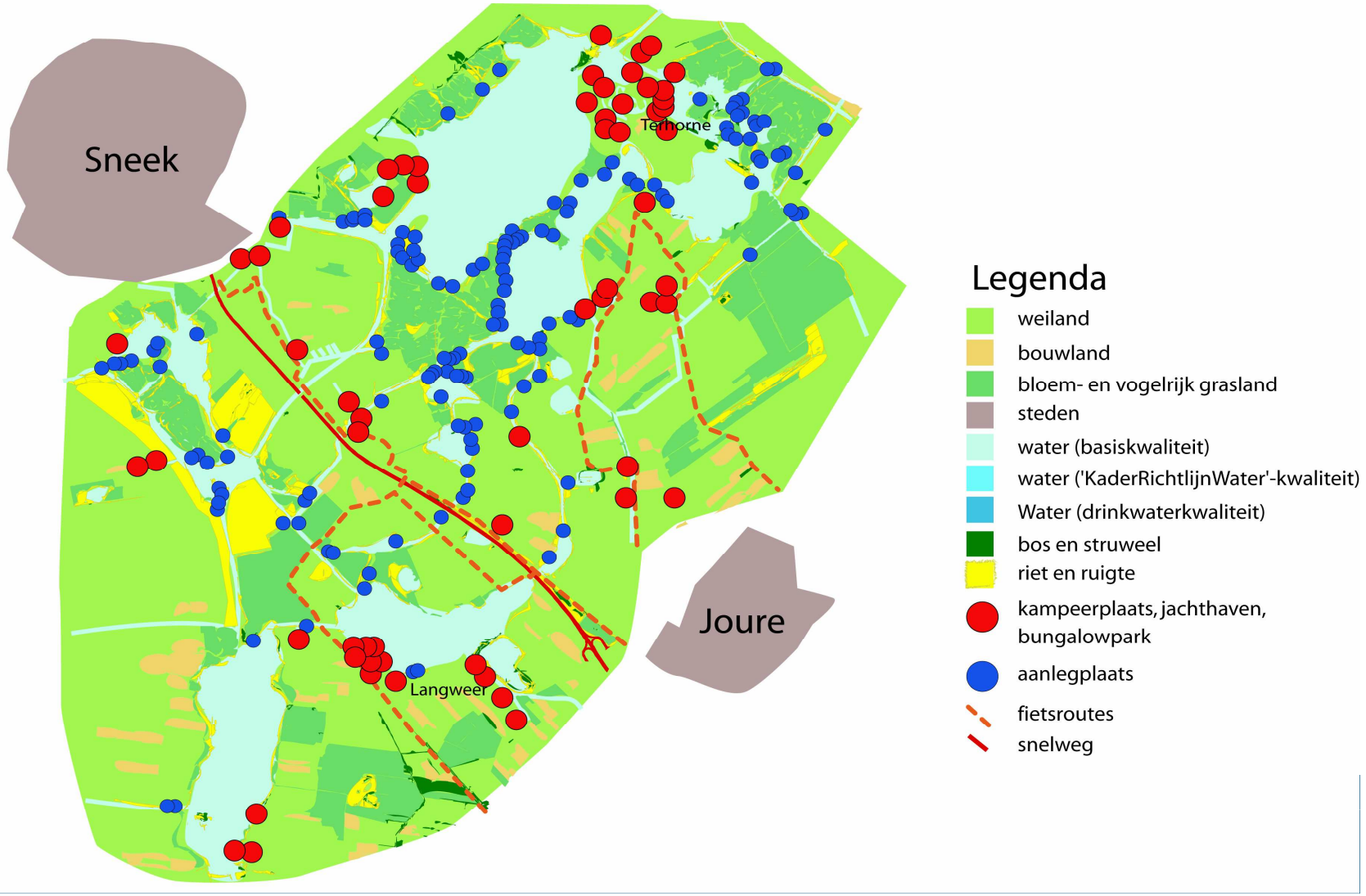
# ‘Nature Conservationist’s preferred Landscape



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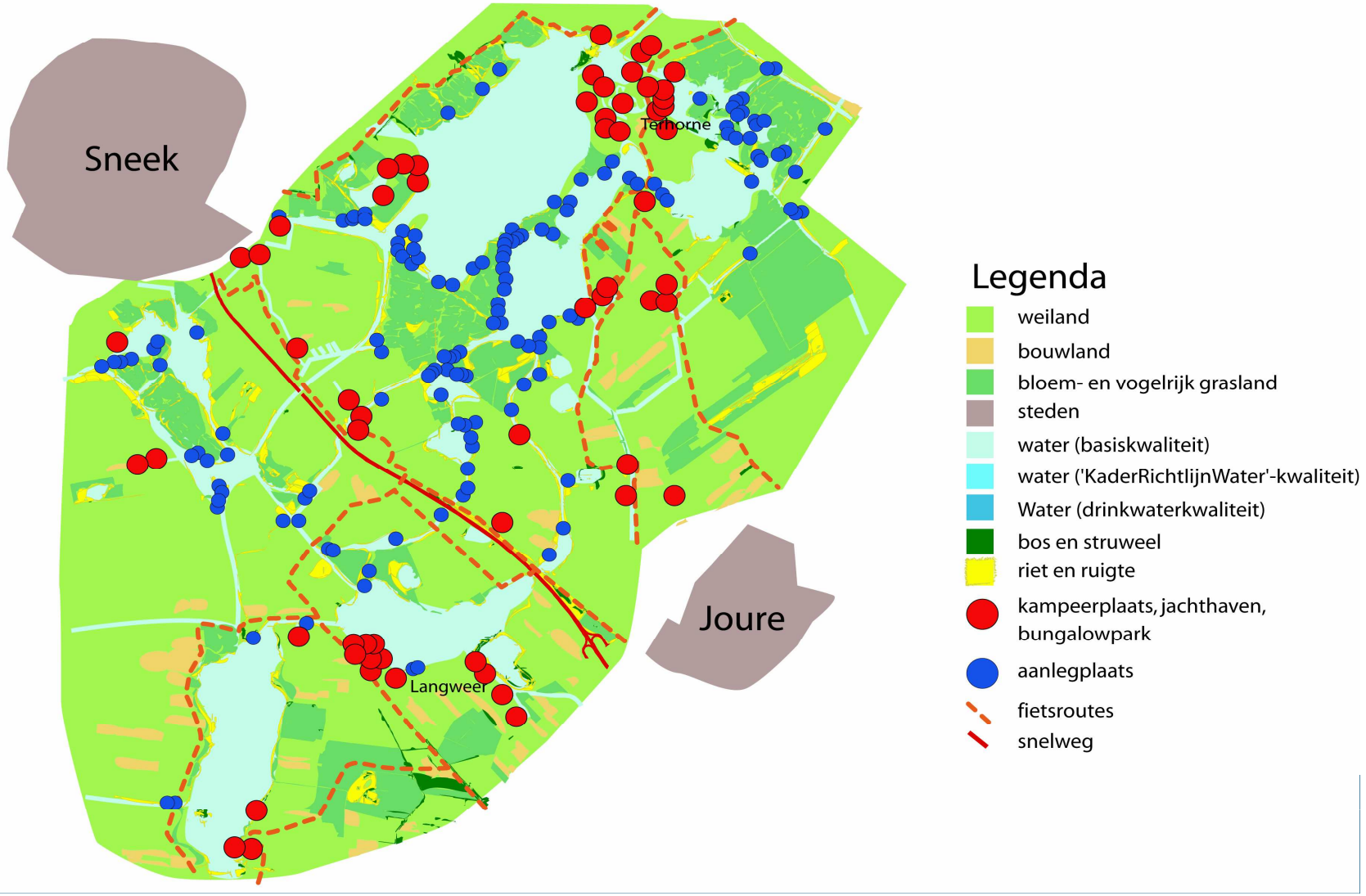
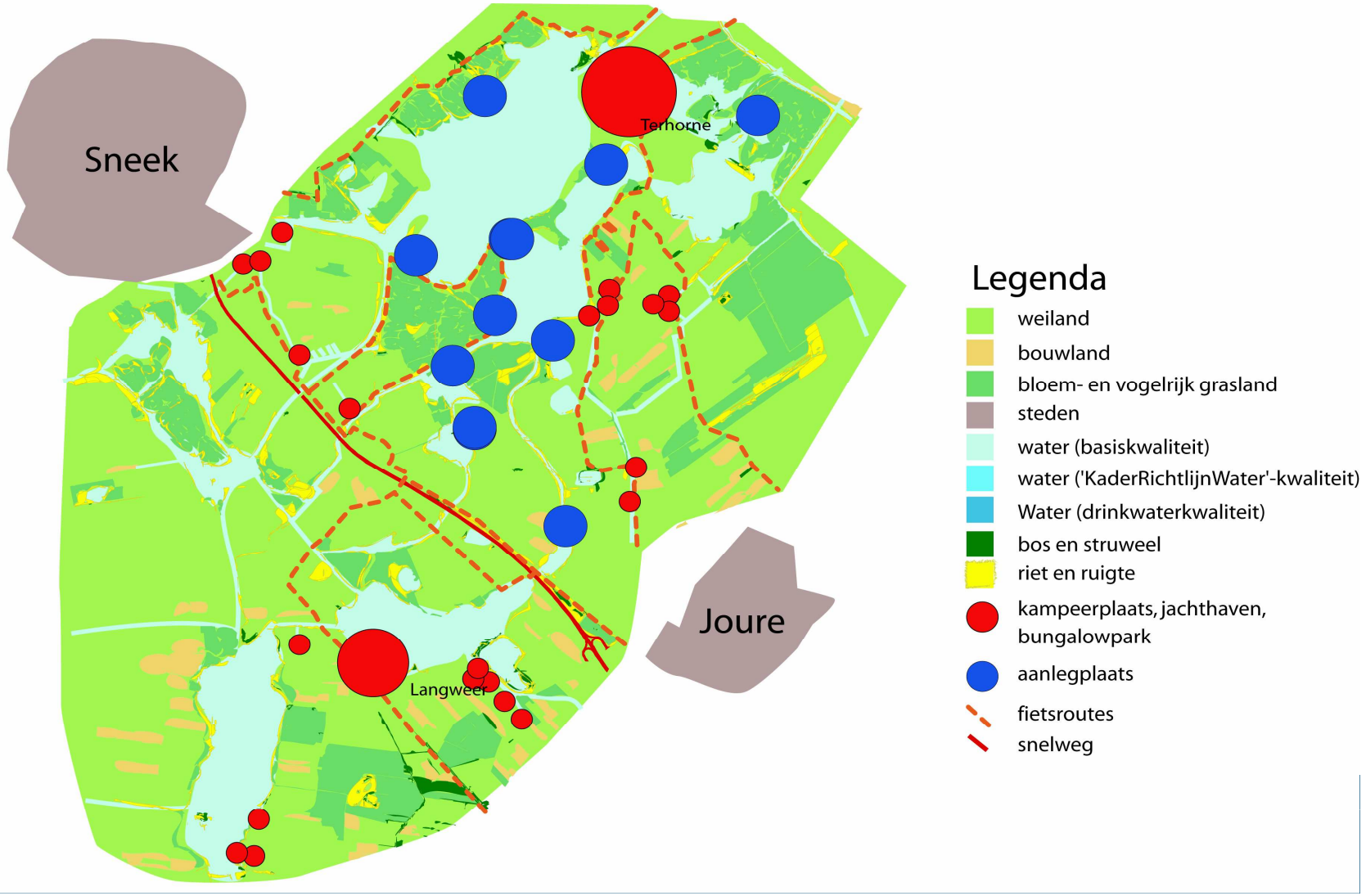
# Recreationist's Preferred Landscape



# Non-preferred Landscape



# 8. Conclusions

- In order to respond to global free trade in agriculture regions have to specialise in either large scale agricultural production or rural services
- The basis for rural services is formed by landscape and nature, which are public goods
- Rural resilience is reflected in the capacity to change the landscape in order to cope with the external shocks of global free trade in agricultural products and climate change

# 8. Conclusions

- Private rural services are linked to the public rural services (landscape, nature, water storage),
- Decentralised interactive planning is necessary,
- RITA is a workable model for this