

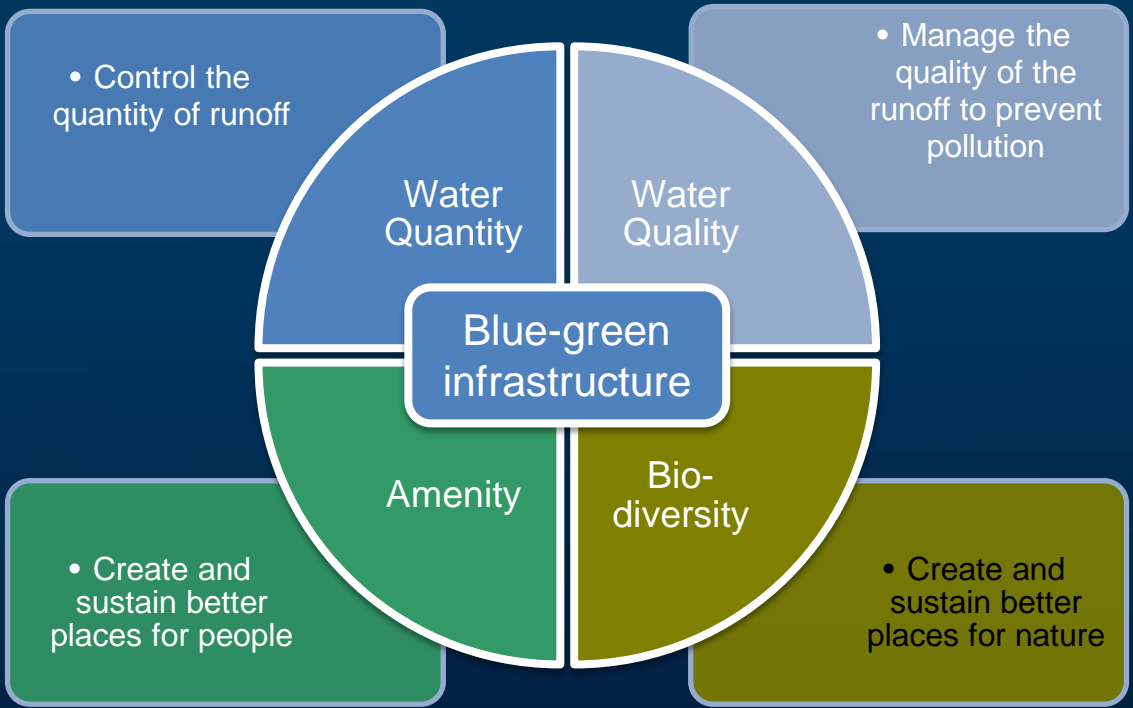


Framtidens VA 2.0 – fler utmaningar och möjligheter

Värdering av långsiktiga fördelar med blå-grön infrastruktur

Frieder Hamann // 08.11.2018

OBJECTIVES



TOOLS

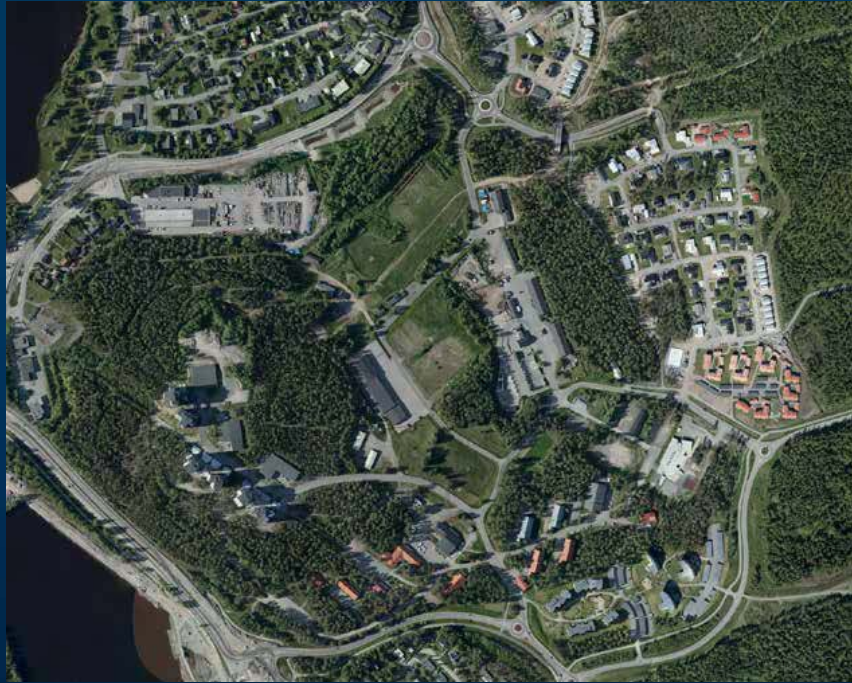
- Best
 - 15 categories (e.g. air quality, amenity, health)



- TEEB
 - 6 categories (e.g. health, social cohesion)



CASE STUDY - KRONANDALEN



Kronandalen before (left) and after (right) the exploitation (Luleå municipality, 2016)

REVIEWED SCENARIOS

A – Kronandalen before developement

B – 'typical' Swedish forest

Baselines

1 – Traditional drainage system

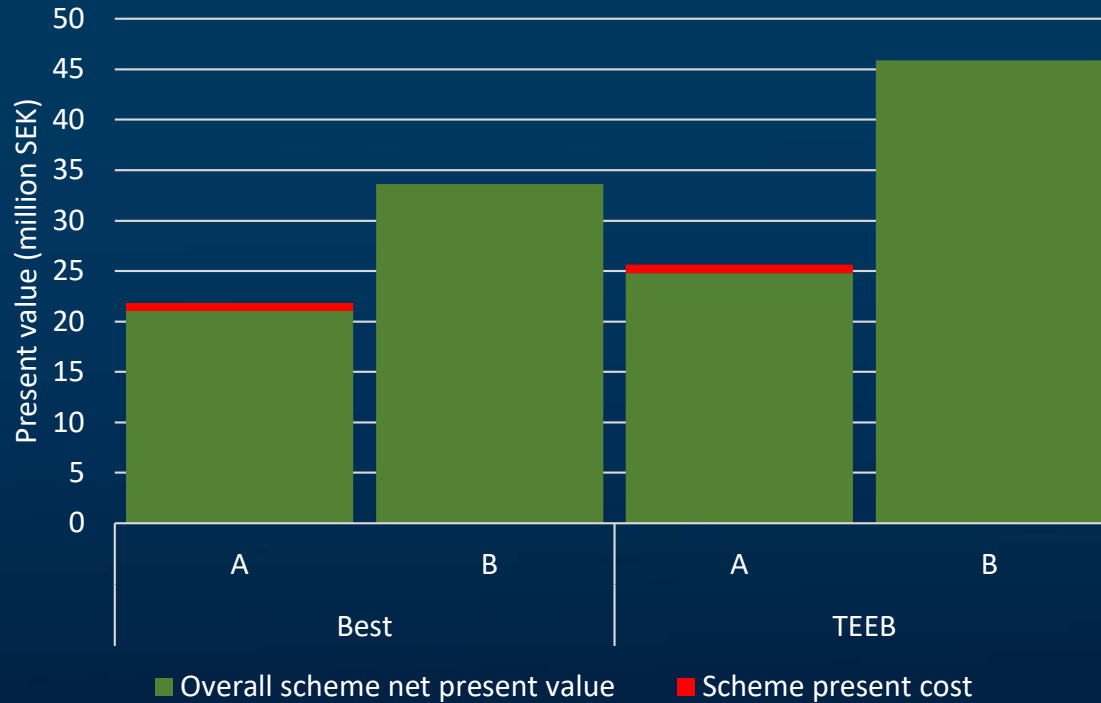
2 – Proposed plan for Kronandalen

3 – extended BGI measures

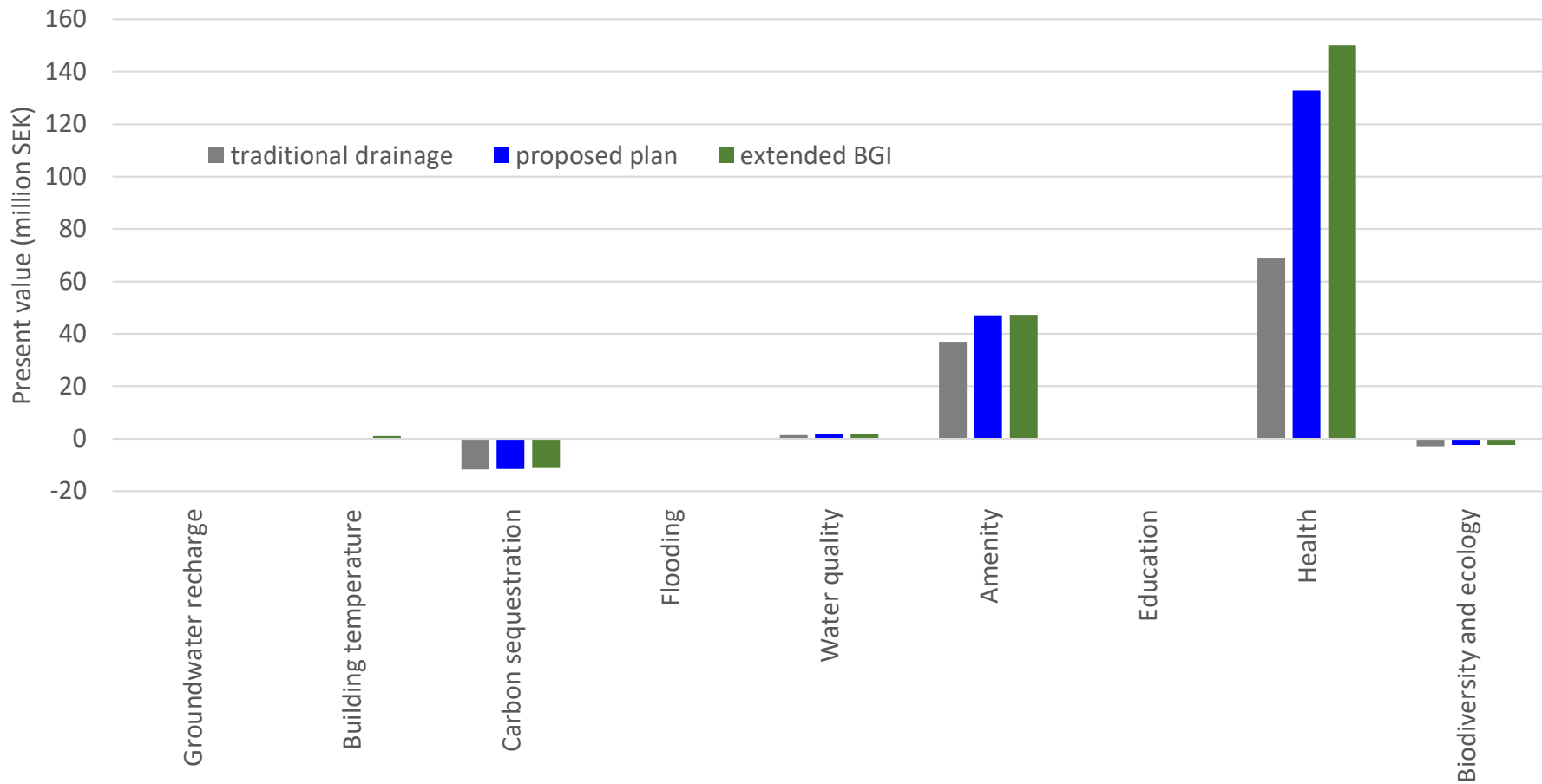
Options



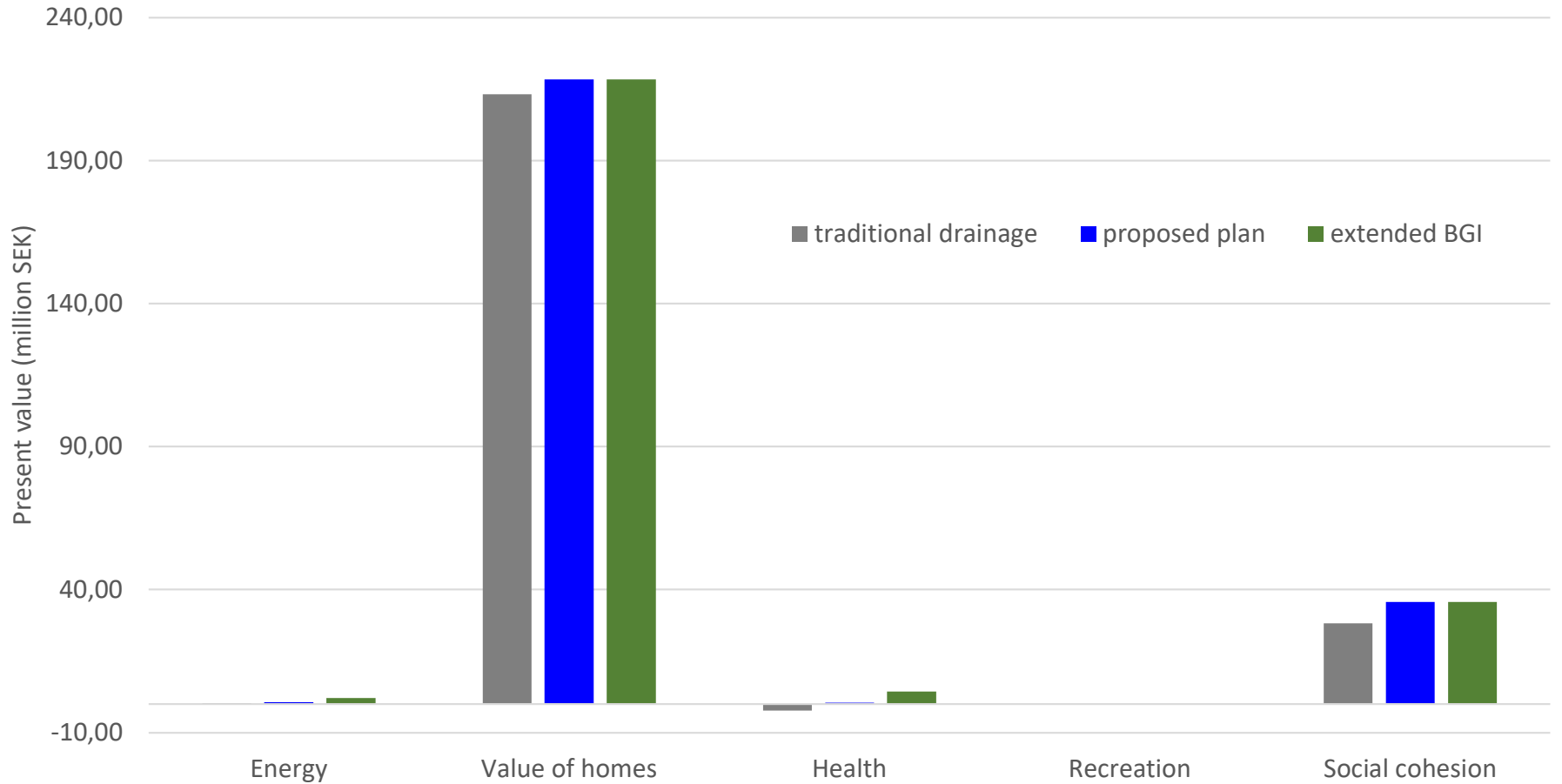
RESULTS - BASELINE



Distribution of the benefits



Distribution of the benefits





CONCLUSIONS AND FURTHER RESEARCH

- Valuation of multiple long term benefits possible
- Value of the area vs. benefits of BGI
- Swedish context (?!)





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SUPPLEMENTS



BEST (A RESULTS IN SEK)

| | Trad. drainage | Prop. plan | Ext. BGI |
|------------------------------------|----------------|-------------|-------------|
| Groundwater recharge | -30,885 | -30,885 | -30,885 |
| Building temperature | 0 | 0 | 1,023,406 |
| Carbon reduction and sequestration | -11,687,276 | -11,512,483 | -11,184,295 |
| Flooding | -117,827 | -117,827 | 0 |
| Water quality | 1,408,180 | 1,725,815 | 1,725,815 |
| Amenity | 37,068,477 | 47,150,312 | 47,244,511 |
| Education | 0 | 33,529 | 33,529 |
| Health | 68,761,609 | 132,824,949 | 150,142,555 |
| Biodiversity and ecology | -2,879,981 | -2,390,026 | -2,379,450 |



TEEB (A RESULTS IN SEK)

| | Trad. drainage | Prop. plan | Ext. BGI |
|-----------------|----------------|-------------|-------------|
| Energy | 277,527 | 647,562 | 2,105,278 |
| Value of homes | 213,300,000 | 218,470,909 | 218,470,909 |
| Health | -2,257,849 | 550,387 | 4,356,344 |
| Social cohesion | 28,172,629 | 35,686,644 | 35,686,644 |



BEST (B – OPTIONS)

| | Traditional drainage | Proposed plan | Extended BGI |
|------------------------|----------------------|---------------|--------------|
| Costs (MioSEK) | 14.5 | 15.5 | 23.5 |
| Benefit value (MioSEK) | 82.2 | 157.3 | 176.2 |
| Net value (MioSEK) | 67.7 | 141.8 | 152.7 |
| Benefit to cost ratio | 5.7 | 10.1 | 7.5 |



TEEB (B – OPTIONS)

| | Traditional drainage | Proposed plan | Extended BGI |
|------------------------|----------------------|---------------|--------------|
| Costs (MioSEK) | 14.5 | 15.5 | 23.5 |
| Benefit value (MioSEK) | 219.2 | 235.1 | 240.0 |
| Net value (MioSEK) | 204.7 | 219.6 | 216.5 |
| Benefit to cost ratio | 15.2 | 15.1 | 10.2 |

