

FROM PREVENTION TO SUBVENTION

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Tyrol in glory, because on a living area of 12,3% from the entire federal state the population has grown about 60% within the last 60 years, as well the population density. At the same time the forestry law and water law disposed utilisation restrictions. In the first instance disposed to serve as prevention, but these laws were misused to develop new building areas.

Except Vienna, the federal states with the highest percentage of mountains in relation to their secure area shows an increase in population up to 0,8% p.a. The comparison of risk-free areas (9% of the total area) and 12,3% of the entire living area of the federal state points out that risk bonded areas in 3,3% of the total area are classified as living area. That means also risk areas were more and more settled.

federal state	area (km ²)	Water and avalanche Risk-areas km ²	% area	utilisable area (km ²)	total 01.01. 2006	EW/km ²	total 01.01. 2005	EW/km ²	EW/km ² Δ 05/06
Burgenland	3.965	622	16	3.343	279.317	83,55	278.215	83,22	0,33
Kärnten	9.533	7.817	82	1.716	560.300	326,52	559.891	326,27	0,25
Niederösterreich	19.174	8.974	47	10.200	1.581.422	155,04	1.569.596	153,88	1,16
Oberösterreich	11.981	8.981	75	3.000	1.402.050	467,35	1.396.228	465,41	1,94
Salzburg	7.155	6.368	86	787	528.351	671,35	526.017	668,38	2,97
Steiermark	16.386	9.800	60	6.586	1.202.087	182,52	1.197.527	181,83	0,69
Tirol	12.649	11.510	91	1.139	697.435	612,32	691.783	607,36	4,96
Vorarlberg	2.601	2.211	85	390	363.526	932,12	360.827	925,20	6,92
Wien	434	81	19	353	1.651.437	4.678,29	1.626.440	4.607,48	70,81
Σ	83.878	56.364	67	27.514	8.265.925	300,43	8.206.524	298,27	

WHERE ARE THE ROOT CAUSES FOR THIS UNDESIRABLE DEVELOPMENT?

1. In the “regional planning”:

- 1.1. The zoning plans, where the veto of the council, overrules substantiated reports and evidence of acknowledged experts. It is our citizen voted council, which should actually act and speak for the general public interest and not for the “money purse”.
- 1.2. The tendency to encourage settlements in deep mountain trenches with uncertain capabilities and long transport distances.
- 1.3. The subvention of tourism! Especially the gastronomy in mountain areas is often deep in danger, because of Europe’s long standing economic fluctuation. This shows that Alps tourism has no effective branch of economy and serves only the upper classes. His economic efficiency declines in shorten winter seasons, so that any investment provides no lasting economical or ecological efficiency.

2. Methodical errors in forestry law:

- 2.1 Forestry law ascertains risk areas from a 150 year old repetition probability. The period seemed sensible, because since 1825 incomplete data’s regarding flow conditions exists, so called “silent witnesses” were in this period quiet easily to interpret, climate changes were viewed as a slow process and changes of utilisation as almost negligible.
- 2.2 The main occurrences within 1825 to 1975 should be calibrated to existing and predicted changes of utilisation and climate.

3. Management errors by creating the plans of danger zones:

ÖROK, Nr. 168, page 19, dated on 01.01.2004:

Federal State	Part of townships with plans of danger zones
Lower Austria	20 – 25 % rest finished within 10 years
Upper Austria	100 % more than half older than 15 years
Salzburg	100 % more than half older than 15 years
Styria	50 % finalization till the end of year 2010
Tyrol	60 – 70 % finalization within approx. 5 to 10 years

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Within the last 29 years since forestry law became legal, only in 2 federal states 100%, in 1 federal state approximately 70%, in 1 federal state 50% and in 1 federal state 25% of the plans of danger zones were finished. All planning's of danger zones of the entire federal states shall be completed in 2014. Meanwhile the first plans of danger zones are to be adapted because of changes of utilisation and climate.

4. Organizational errors in laws:

4.1. The forestry law knows a "red danger zone" by tragic occurrences with 150 yearly repetition probabilities. The RIWA-T 1994 speaks from a "red danger zone" by tragic occurrences with 100 yearly repetition probabilities. This leads to overall misunderstandings!

5. Lacking fantasy of experts:

5.1. More than 150 yearly occurrences are considered more or less distinctive "outliers" of a supposedly constant trend, whereas the experts assume a regression of water flow and time with $r = \pm 0$. This assumption attests the experts lacking imagination: The catastrophe of Dobratsch, which led to an extreme flood event, took place about 700 years ago, whilst the constructions of barrages and dams have to be dimensioned for 5000 yearly incidents.

5.2. The preventive measures got falsely evaluated: The Salzach hydroelectric power stations should absorb flood peaks and delay drain events for a certain time period. The retaining capacity sinks under 30%: Flushing of the reservoirs failed on lacking mean tide level, low remaining storage level and lacking storage space for the flushed materials. Similar is the situation at most of the bed load barrages: The time lag of "flushing" the bed load barrages is increased by silting as a follow of water drainage for the supply of drinking water.

5.3. Some experts in Styria representing the meaning that in areas of flood drain or in yellow danger zones (forestry law) without protecting measures can be build and if the water highness are low enough, the infrastructure effects are minor.

What were the consequences?

1. Obscurities and incomplete instructions while generating the land utilisation plan lead to building permissions in risk inclined areas, because no risk plans or expertises prohibited this explicit. In former times when building experts were self dependent, they would not have accepted building in these risk areas.
2. Preventive measures become subsidised as redevelopments, eg. the reservoir "Grünspeicher" near the Styrian town of Schwanberg was built to rehabilitate building permits in red danger zones (forestry law) or 30 yearly floated zones (water right) and avoid penalty. Prevention degrades to subvention of all the building actions who were done contra forestry law.

How can these undesirable developments be met?

1. RIWA-T1994 acts on the assumption of once in 300 years. So forestry law has to regard a 450 – 500 yearly incident.
2. The actual climate change is regarded to be "anthropogenic", but climate in the 14th and 15th century with its building in high altitude areas as "geogenic". A similar development has to be assumed also in our days.
3. By assuming a worst-case scenario with an estimated degree of utilisation and retaining capacity. As well stopping any subvention of buildings that were built in risk zones after 1975 and support of tourism infrastructure in high altitude areas.
4. By economic consideration, as it is not acceptable to establish embankment dams and storage reservoirs, which cost more than the protected buildings and structures or to redevelop agricultural areas smaller than 4m² with amounts of € 3.000 - € 4.000, rather than release the ground.

Résumé:

The stability – especially of mountain areas – is limited and cannot be considerably improved by technical measures. Taking this into account, resources should only be used for stabilization and in no case for redevelopment and subvention.