

# „State of play“ in the Czech Republic“

Eva Sovjácova

Department of Water Protection  
Ministry of Environment

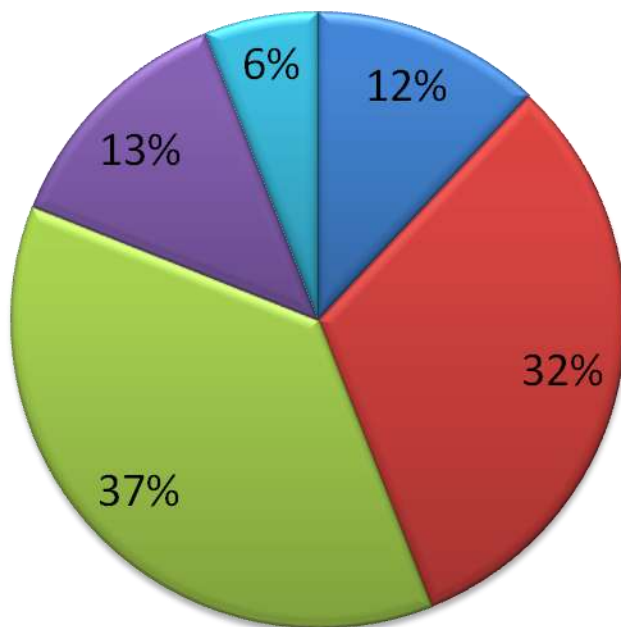
Forum zur EU-HWRM-RL, Dresden,

26.6.2009

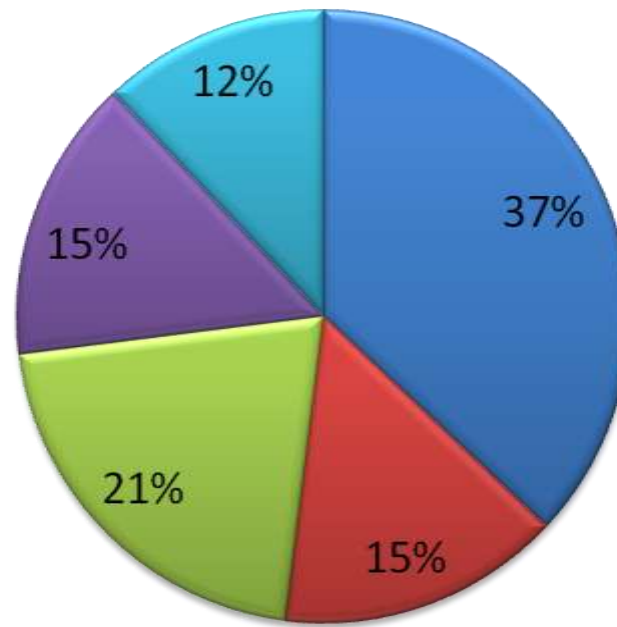


# Impact of climate change

Source: Flash EB N°261 – Flash Eurobarometer on water



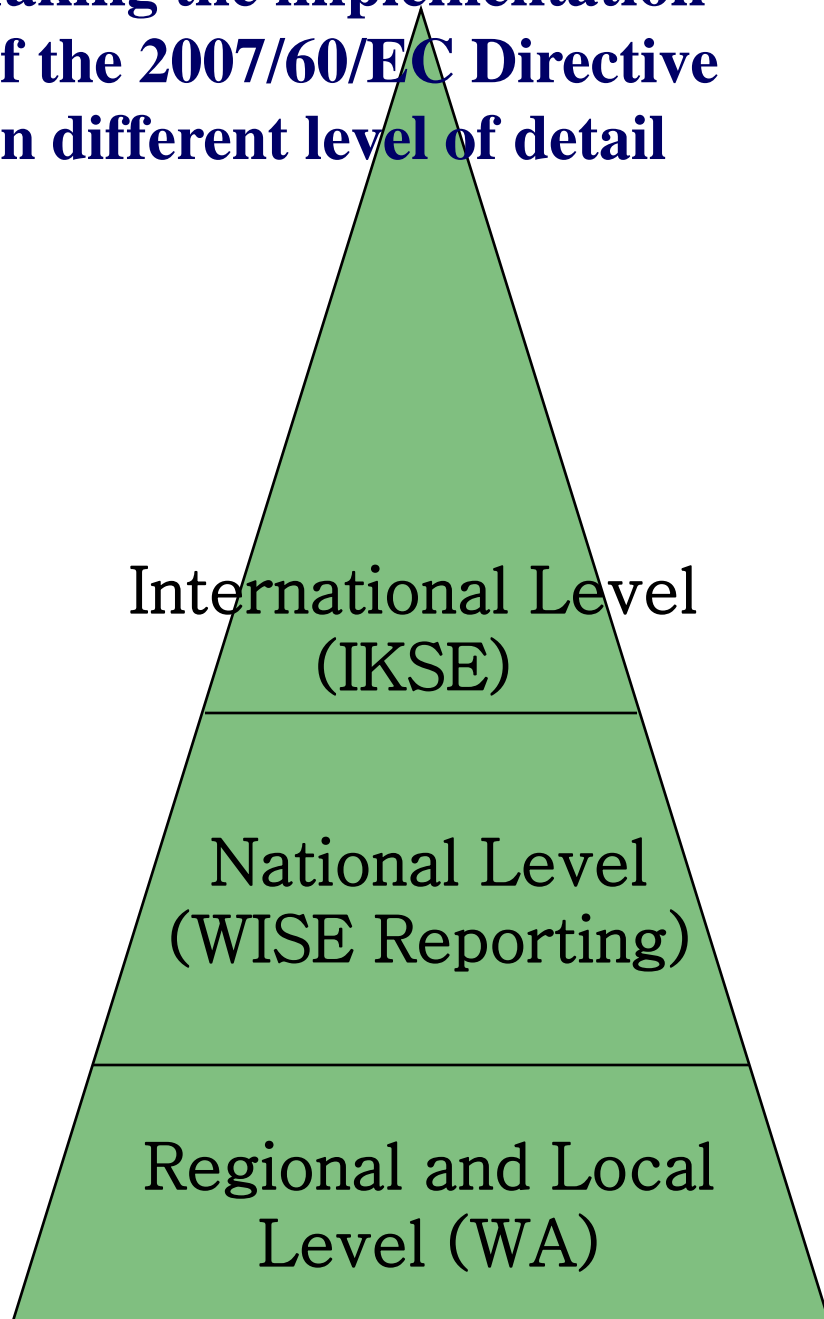
- A very serious problem
- A fairly serious problem
- Not a serious problem
- Not a problem
- Other



- More floods
- Rising sea levels
- Increasing problems with water scarcity and droughts
- Changed ecosystems
- Others



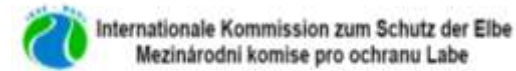
# Taking the implementation of the 2007/60/EC Directive on different level of detail



# International Level (IKSE)



1998



Aktionsplan Hochwasserschutz Elbe

2003



2005



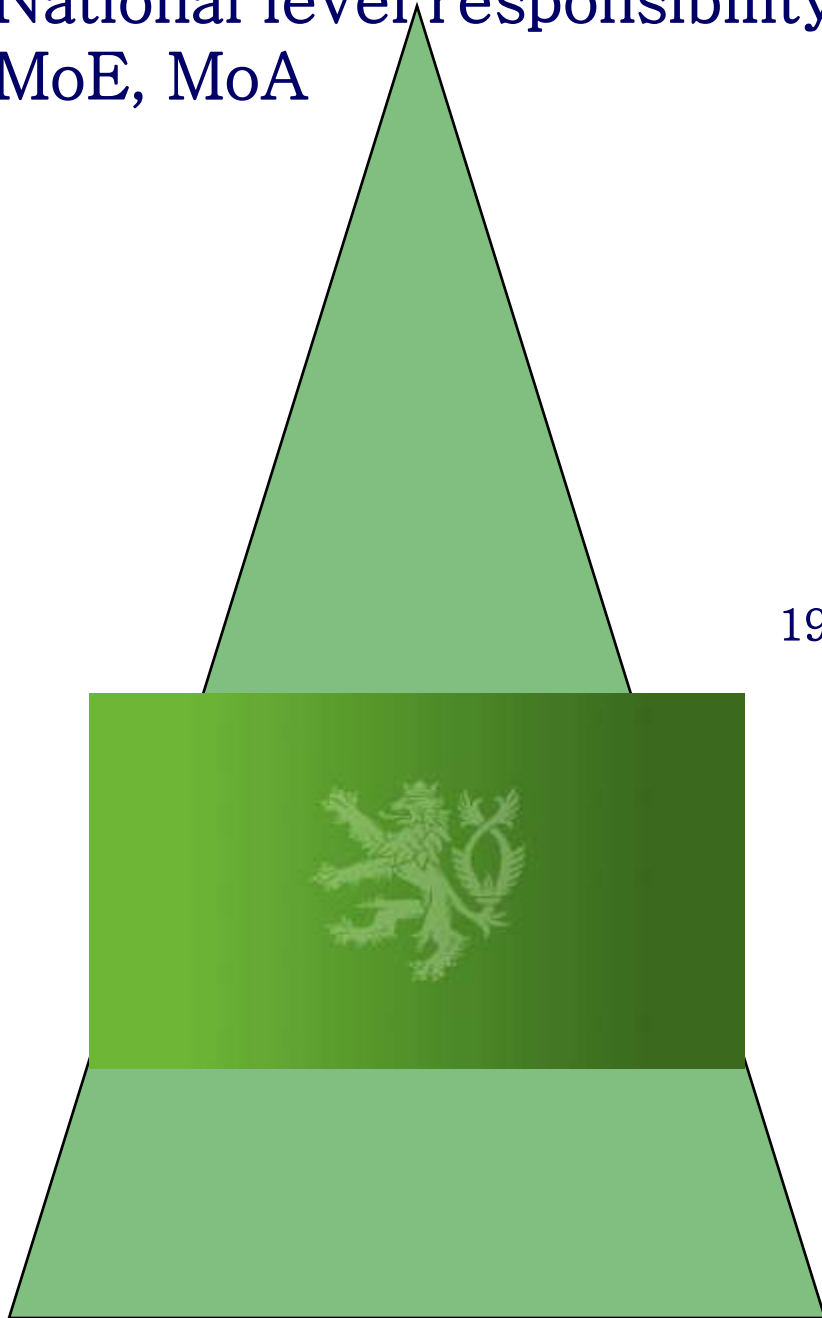
2007

Common documents  
Common statistics  
Common GIS (WasserBLICK)  
Common projects:

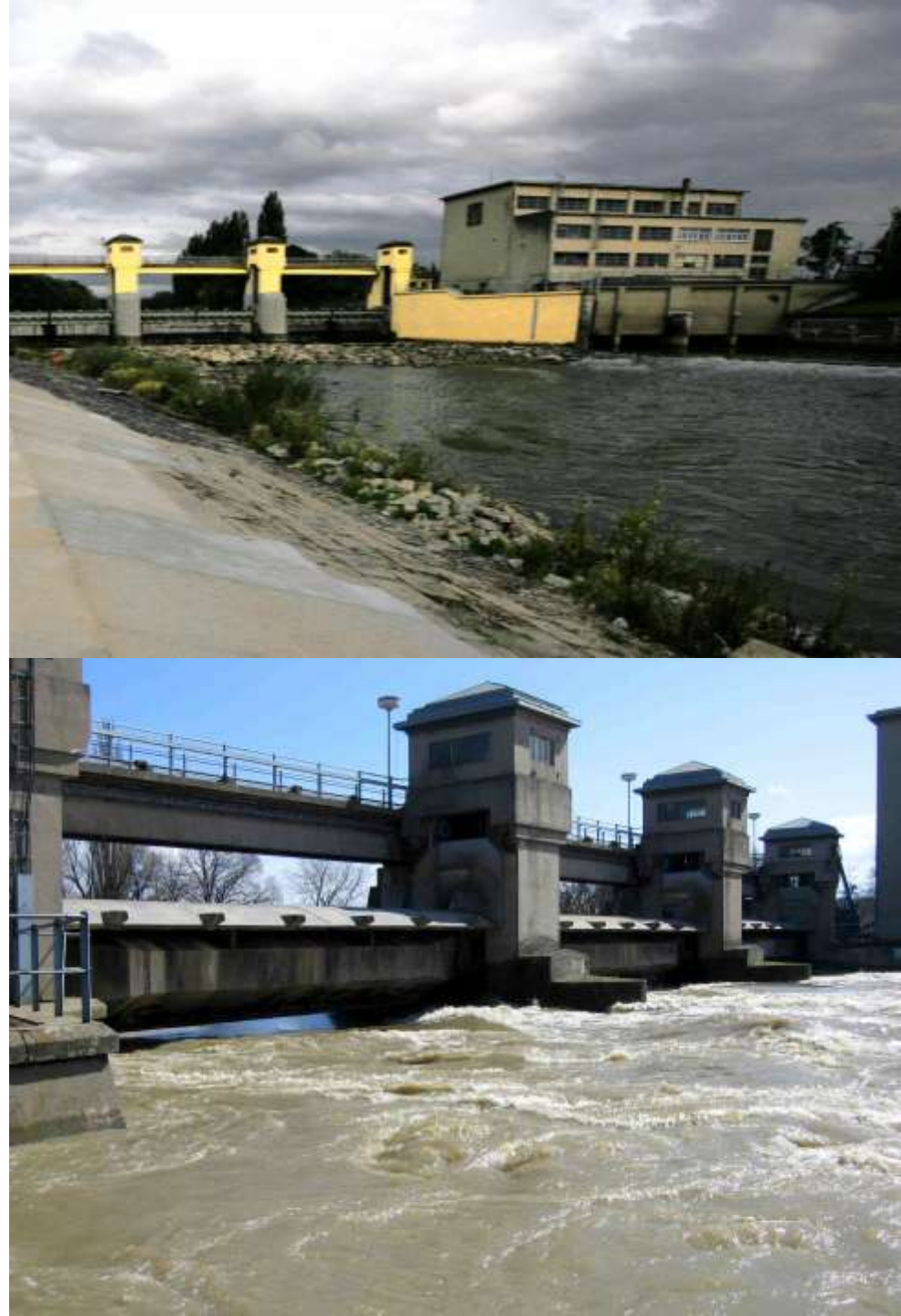




National level responsibility:  
MoE, MoA

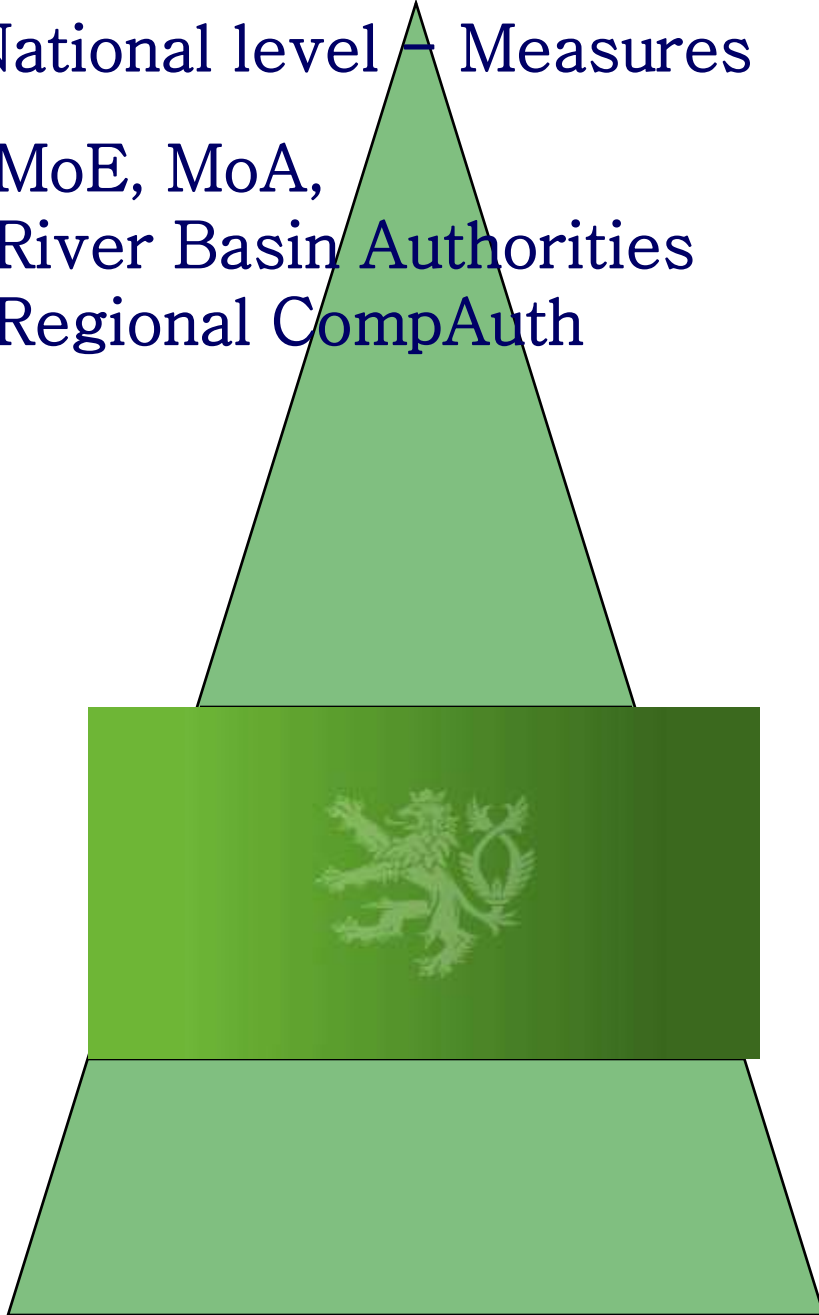


1997



# National level – Measures

MoE, MoA,  
River Basin Authorities  
Regional CompAuth

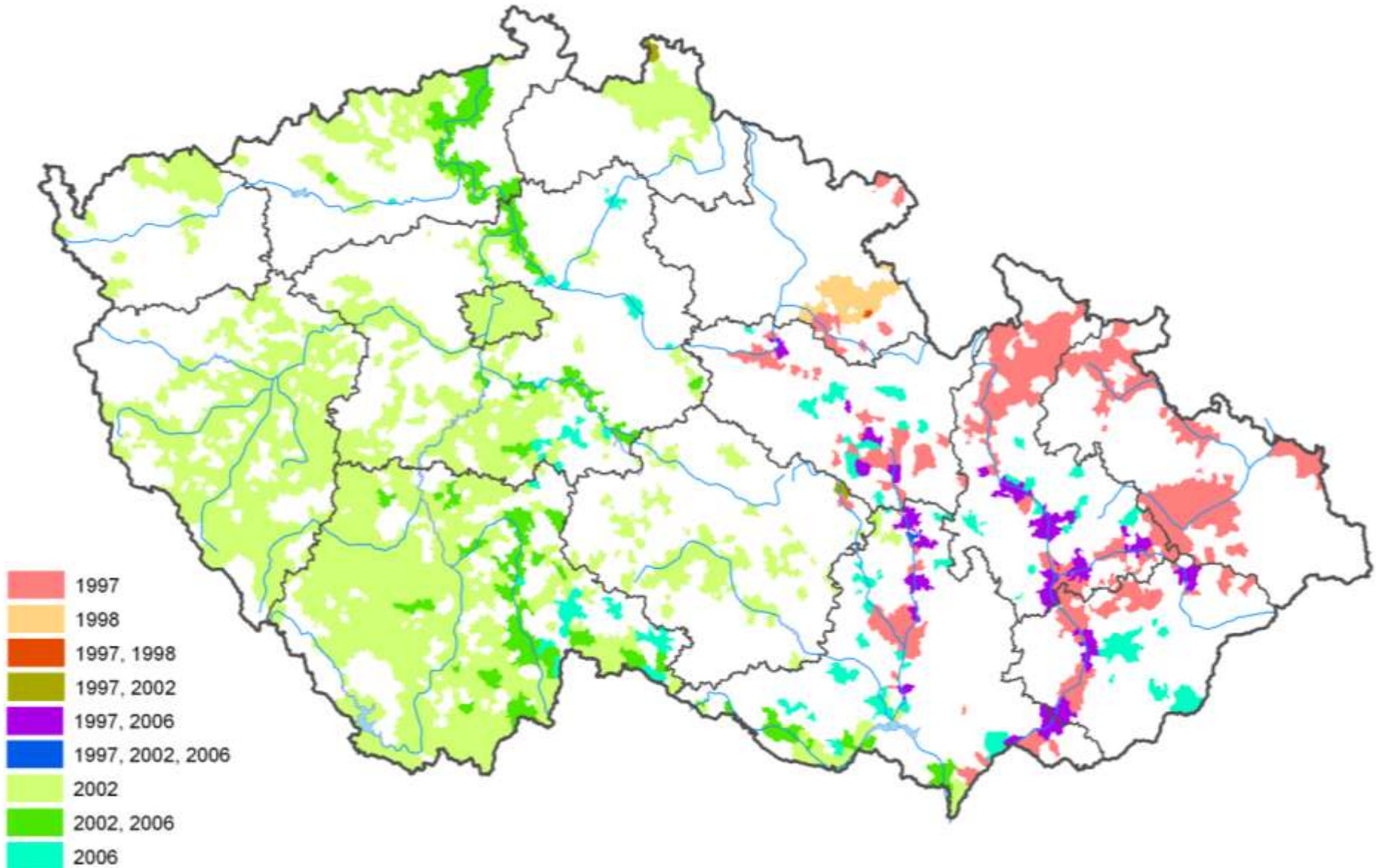


## Step by step improvements since 1997:

- **Early Warning system**
- **Upgrade or new law**
  - flood management
  - renewal of territory affected by floods (state aids)
  - rescue teams activities
- **Strategic documents incl. regular reports to government**
- **Financing of technical measures**
- **Management of ecological measures**
- **Information support**
  - statistics
  - flood plains mapping
- **Package of measures included in first water management plans (2009)**

# Information support – spatial distributed statistics

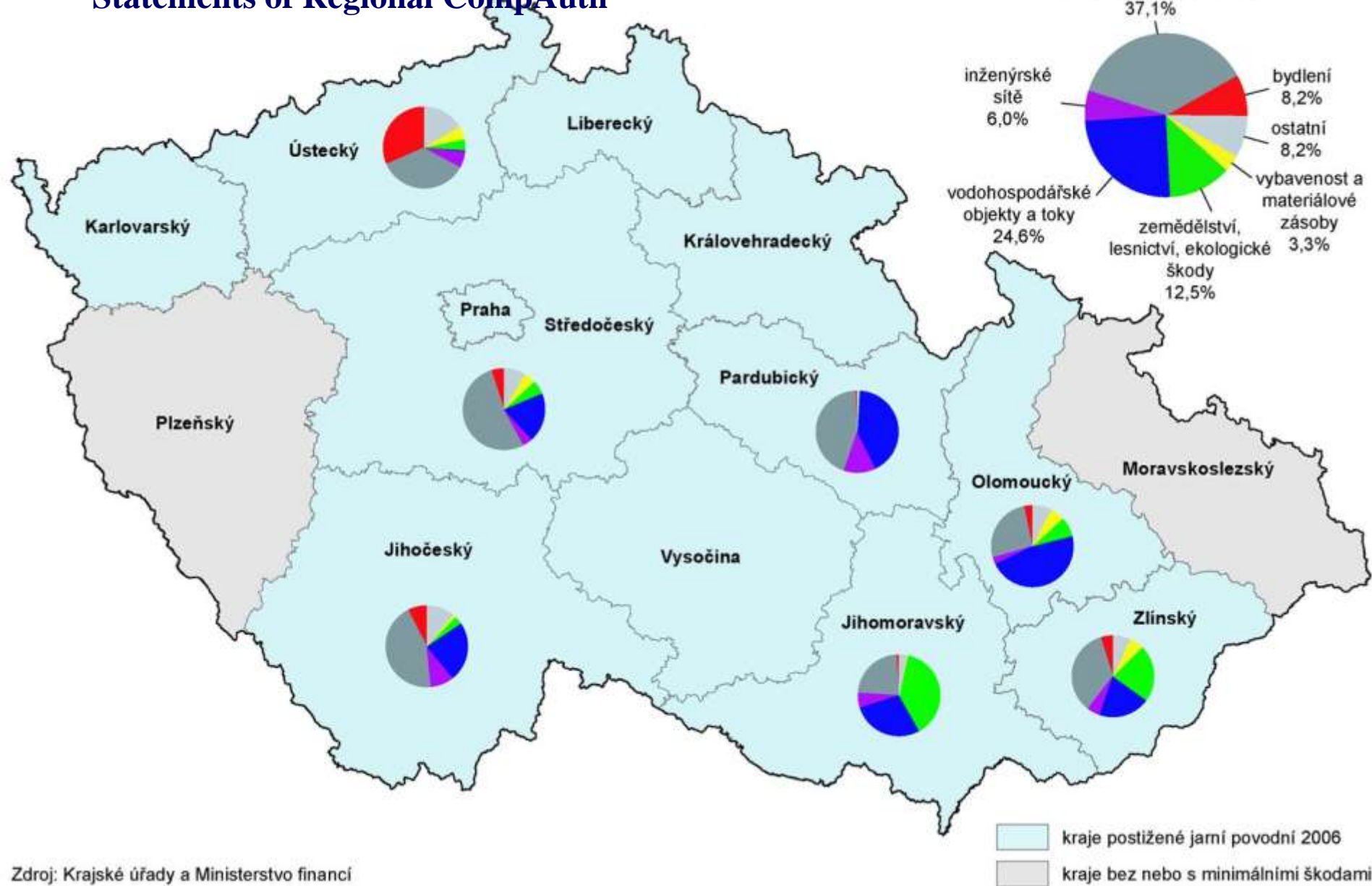
## I. Examination of flood damages on dwelling houses– responses from communities level





## II. Financial assessment in 2006

### Statements of Regional CompAuth





# Information support

## - Mapping

The paper Map of flood plains 1:10 000

- sheet version

Czech abbr.: MZÚ10

Responsibility: MoE (topical flood data)

Decree of the MoE: 236/2002 Sb.

Producers:

- Water Research Institute T.G. M. p.r.o
- Czech Landsurveying Office

Copyright: Czech Landsurveying Office

(Basic geographic data of the CZ –  
ZABAGED®)



# Mapping of the Flood Plains

Development of the MZÚ10 since 2002 on the base of the Fundamental base of geographic data of the Czech Republic at the scale of 1:10 000 (ZABAGED®)

- The digital topographic model of the territory at the level of details of the Base Map of the Czech Republic at a scale of 1:10 000
- The content is formed by 106 types of geographic objects represented by planimetric features and the corresponding descriptive and qualitative attributes
- The elevation component is formed by a digital spatial vector set of contour lines

**Orthorectified images help to check on the quality of hydrographic features**







1:10 000

1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 26

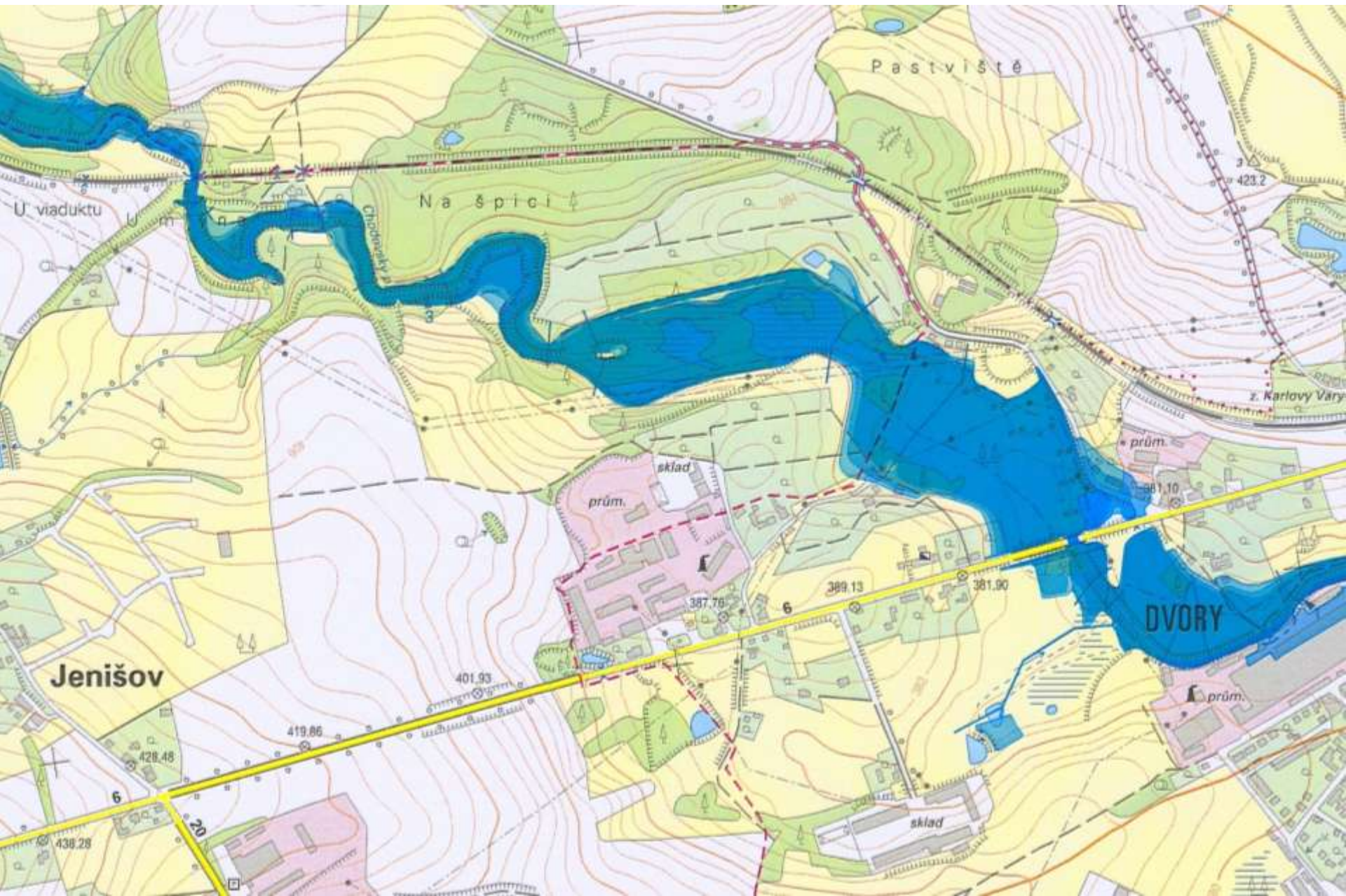
Received 15 June 2015; accepted 15 September 2015  
 DOI: 10.1002/for.2320

[illegible]

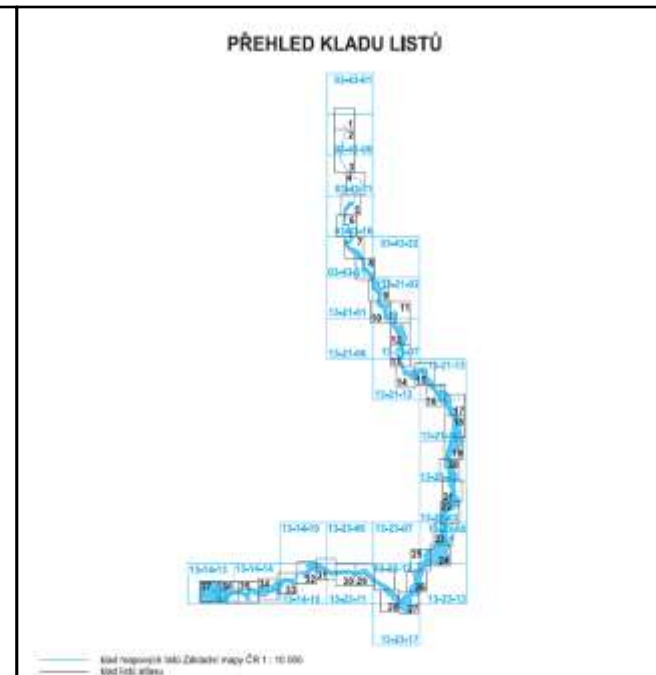
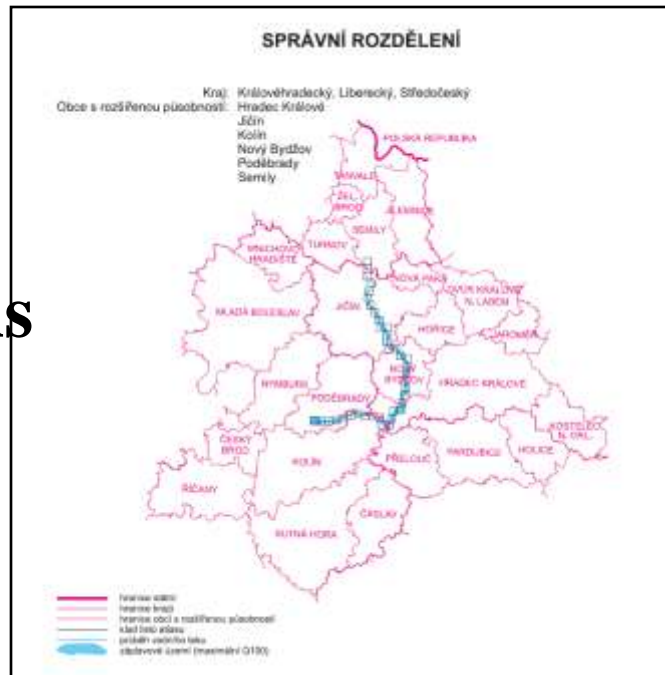
Reaction 1	Reaction 2	Reaction 3
Reaction 4	Reaction 5	Reaction 6
Reaction 7	Reaction 8	Reaction 9



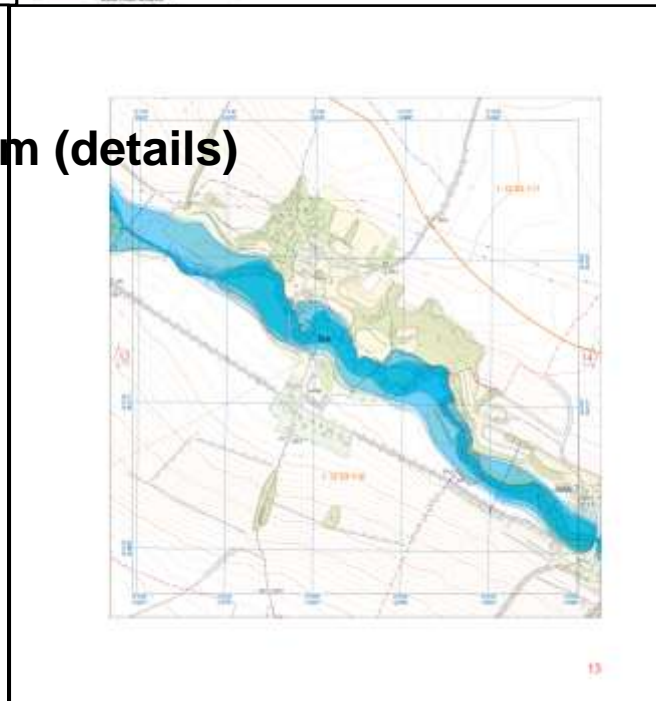
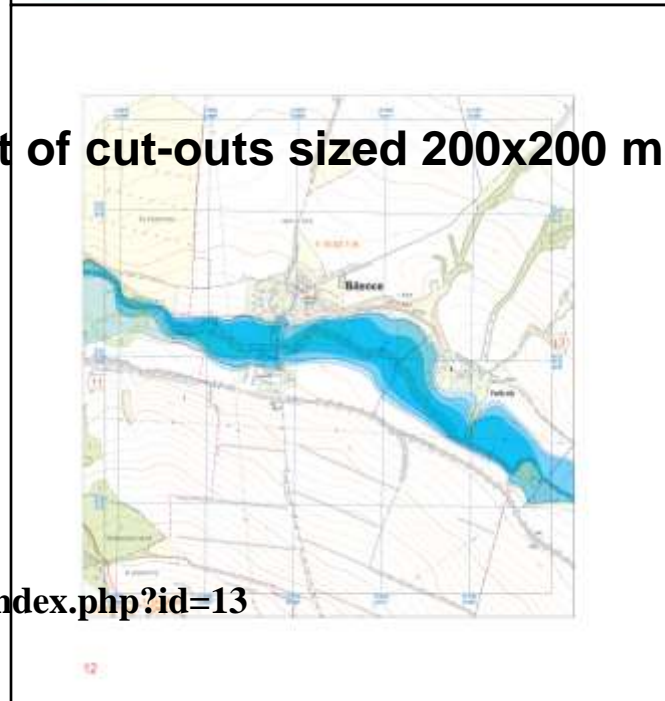
# Detail of the state Map of Flood Plains 1:10000



# Re-arrangement of the Map of the Flood Plains (1:10000)



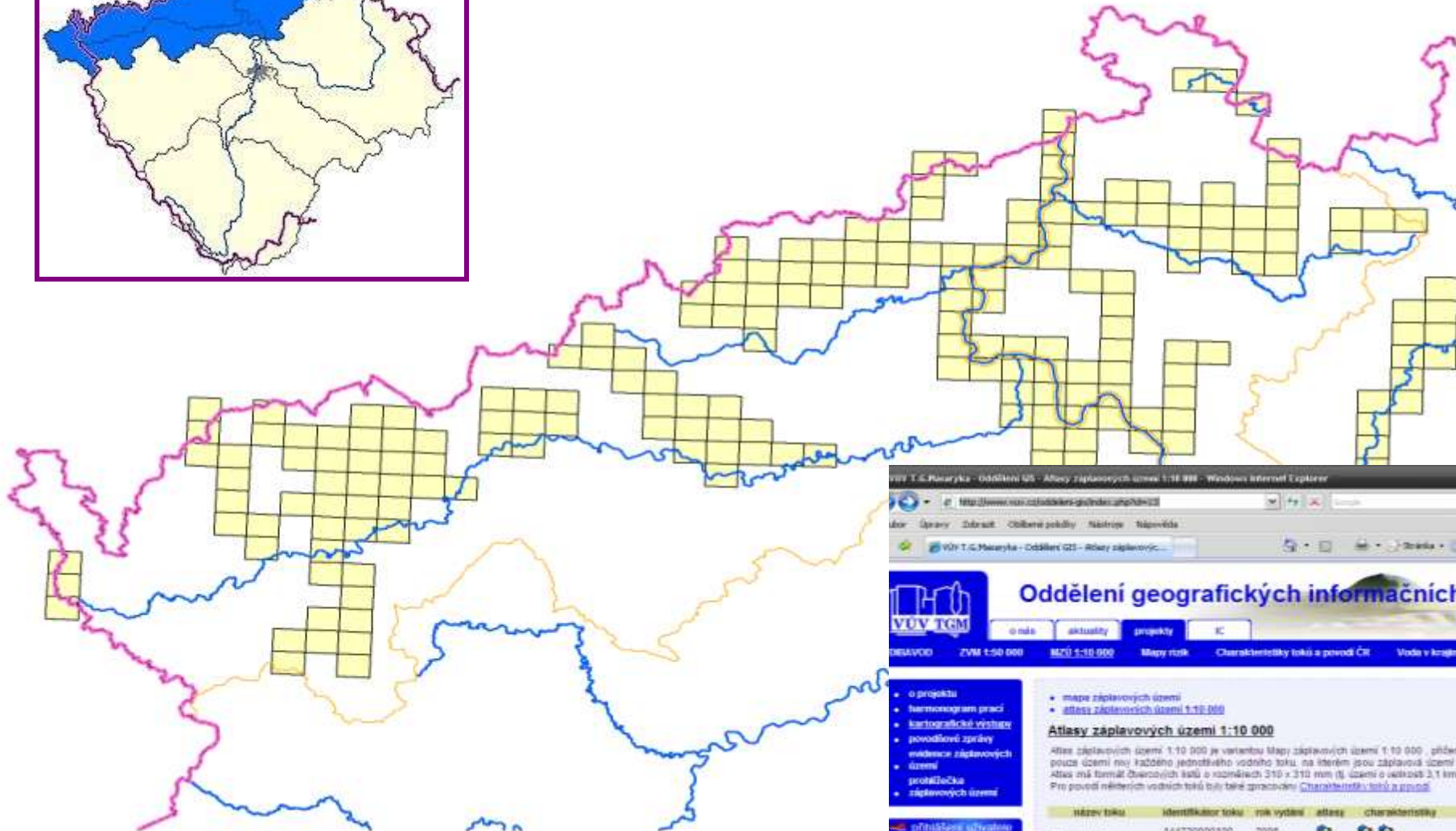
Spatially arranged set of cut-outs sized 200x200 mm (details)



<http://www.vuv.cz/oddeleni-gis/index.php?id=13>



# Disponibility of the MZÚ10 in Ohře/ Eger sub-basin



VÚV T. G. Masaryk - Oddělení GIS - Atlasy záplavových území 1:10 000 - Windows Internet Explorer

http://www.vuv.cz/oddeleni-gis/index.php?ID=23

Účel Úpravy Zobrazení Ověření polohy Nástroje Náhledy

VÚV T. G. Masaryk - Oddělení GIS - Atlasy záplavových území

### Oddělení geografických informací

o nás aktuální projekty IC

OBRAZOVÝ ZVM 1:50 000 MZÚ 1:10 000 Mapy rozk. Charakteristiky toků a proudů ČR Voda v krajině

- o projektu
- termínogram prací
- kartografické vzhledy
- povodňové zprávy
- evidenční záplavových území
- protiřeka
- záplavových území

**Atlasy záplavových území 1:10 000**

Atlas záplavových území 1:10 000 je variantou Mapy záplavových území 1:10 000, přičemž pouze území nivy každého jednotlivého vodního toku, na kterém jsou záplavová území vytyčena. Atlas má formát čtverečních listů o rozměrech 310 x 310 mm (B1) - území o velikosti 3,1 km<sup>2</sup>. Pro provedení měřičních vodních toků byly také zpracovány [Charakteristiky toků a proudů](#).

Název toku	Identifikátor toku	rok vydání	atlas	charakteristika
Blýž potok	144230000100	2006		
Bušilský potok	140610000100	2006		
Bystřa	146070000100	2006		

[přidání nové záplavové oblasti](#)

učební cíle

heslo

Water Research Institute T. G. Masaryk,  
public research organization. – web page





Regional and Local Level Activities in Implementation  
of the 2007/60/EC Directive

o  
l  
p  
u  
a  
l  
a  
u  
o

# New approaches

Bottom up approach

Q500 – Scenarios for floods with low probability

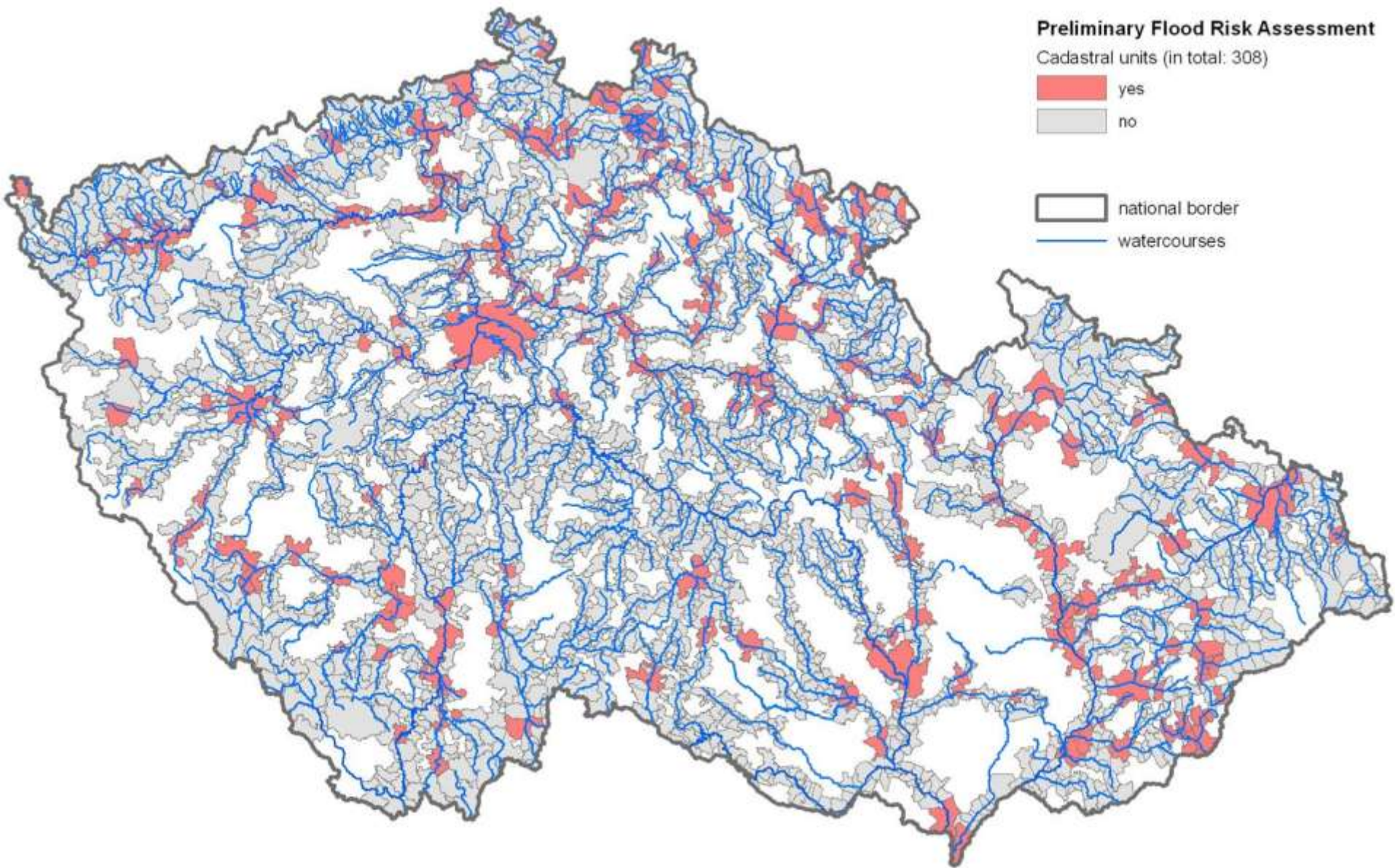
Selected area for detail modelling of flood risk and flood hazard and impact of measures

Ties on land-use planning (esp. built-up, industrial areas)





# Selected area for detail modeling of flood risk





# **Under development**

**Land use description**

**Risk assessment methodology**

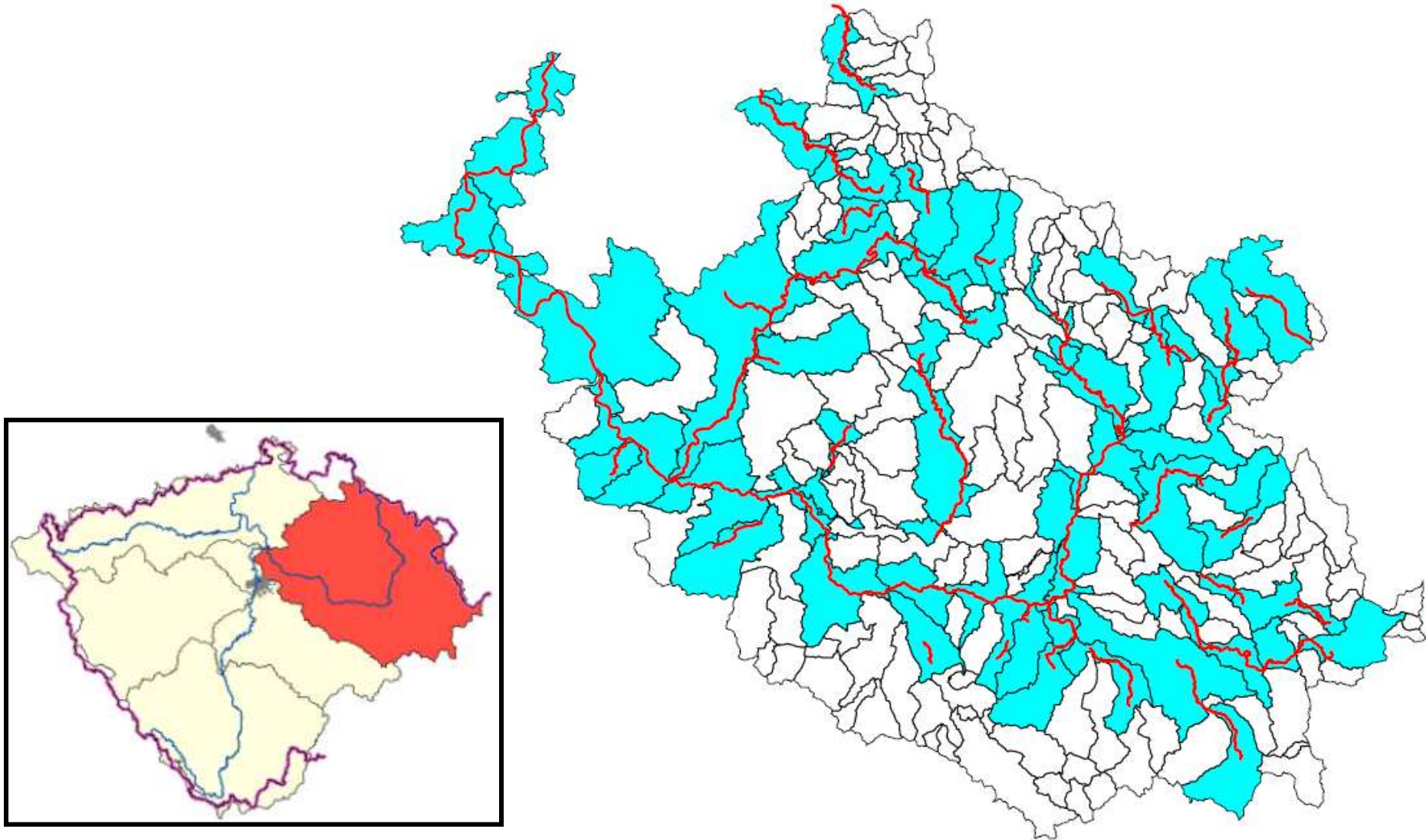
**Design of Flood hazard maps – on local level (1:10 000)**

**Design of Flood risk map – on local level**

**Common approach in the international river basins**



# Cadastrres affected by floods



# Gaps

**European harmonised land-use description  
for transboundary scenarios development**

**Sufficient land–use description for national  
and regional level of models**

**INSPIRE specification (Annex III,**

**DEM on high resolution and accuracy**





# **In cooperation with:**

**Ministry of Environment:**

**Josef Reidinger**

**Michaela Brejchová**

**Helena Skálová**

**- LABEL Project:**

**Water Research Institute**

**T.G. Masaryk, p.r.o:**

**Michael Jakš,**

**Pavla Štěpánková**

**Aleš Zbořil**

**Povodí Labe, s.p.:**

**Václav Jirásek,**

**Aleš Krška**

**URS Praha, a.s.:**

**Jan Müller**

**IKSE-MKOL:**

**Petr Kuřík**

**Photos -@:**

**Jaromír Míčka**



**Thank you for your time**

