Reallocation of property rights
(Art. 45 ff. BauGB)
Structure

- Price development
- Reallocation procedure
- Valuation by deduction
- Example
- Conclusion
Price development

Price increase of building land in the development process

A: Passing preparatory land-use plan
B: Resolution to draw up legally binding land-use plan
C: Presentation of the draw
D: Passing of the legally binding land-use plan
E: Beginning reorganization of the land property
F: End of the reorganization
G: Begin of the construction of infrastructure
H: End of the construction of infrastructure

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Mandatory procedure: the surplus value caused by the planning remains to the land owner, the part caused by the reallocation and new infrastructure remains to the Municipality.

Cooperative procedure: The Municipality is able to make a grab at the part which is caused by the planning.
Reallocation procedure

- The reallocation is a type of development directed by the Municipality with collaboration of private owners.
- Example: The owners participate with an undeveloped area (but within the area covered by a legally binding land-use plan) and the Municipality realizes the reorganization of the land property, returning to the owners developed parcels with a value corresponding to the initial value of their undeveloped land. The resting area retains the Municipality (e.g. for public housing). The procedure can be voluntary or compulsory. Apart of the payment in area the possibility of a payment in cash exists, i.e. in that case the owners have to pay for the surplus value of their land.
- The application of this instrument requires a modern cadastre and a specific legislation.
- Standard procedure for the development of new building land in Germany

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Reallocation procedure

Purpose (Art. 45):
Reorganization of the land to
  – implement the infrastructure in the area
or
  – improve the form of the parcels
in such a manner as to create plots suitable in terms of location, shape and size for built development.

Conditions:
  – legally binding land-use plan
or
  – parcel in an urban zone
Reallocation procedure

Example: Development of agricultural land to building land

Map (Map of contribution)

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Reallocation procedure

Example: Development of agricultural land to building land

Map (legally binding land-use plan)

- Residential zone, maximum of two floors
  - Street (658 m²)
  - (3526 m²)

- Residential zone, maximum of two floors
  - (3632 m²)

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Reallocation procedure

Competences (Art. 46 BauGB):

• The ordering and execution of reallocation is the responsibility of the Municipality (reallocation department) and shall occur where and as soon as this is required to implement the binding land-use plan.
• The Municipality has to hear the owners to investigate their opinions in reference to the planned procedure
• No legal rights exist (for the owners) to the ordering and execution of reallocation.
Reallocation procedure

Prohibition on Disposition and Development Freezes (Art. 51 BauGB):
During the procedure the following are allowed within the reallocation area only with written permission from the reallocation department:

- Subdivision of a parcel,
- making of dispositions over a parcel or rights to a parcel (e.g. selling the parcel or constituting a mortgage or public easements),
- significant change to the ground surface,
- realizing modifications influencing the value of the parcel (e.g. erection or changes of physical structures).
Reallocation procedure

Parties involved (Art. 48 BauGB):

- The owners of the parcels,
- the holder of a title entered in the land register or of a secured right to a property located within the reallocation area,
- the Municipality,
- public agencies charged with the provision of local public infrastructure.
Reallocation procedure

Reallocation Mass and Distribution Mass (Art. 55 BauGB):

• **Reallocation Mass (Ra):** The extent of the reallocation mass is calculated by adding together the area of the parcels located within the area for reallocation (private and public areas)

• **Contribution Mass (C):** Sum of all private parcels ($\sum C_i$)

• **Area of existing infrastructure (E):** Sum of all areas of existing infrastructure (mainly roads)

  - Formula: $Ra = C + E$

• **Area of new infrastructure (N):** Sum of all areas of new infrastructure following the legally binding land-use plan (mainly roads and pavements)

• **Area of ecological compensation (Ce):** Sum of all public areas to compensate the ecological damages because of the construction of infrastructure

• **Deduction of area (de):** Additional needed area for public purposes (infrastructure and compensation):

  - Formula: $de = N + Ce - E; \quad de\% = (de:C) \times 100$

• **Distribution Mass (Dis):** Sum of all private parcels following the reallocation plan (based on the legally binding land-use plan)

  - Formula: $Dis = C - de$
Reallocation procedure

Criteria of distribution (Art. 56 BauGB):
The distribution mass has to be distributed corresponding to the share of the contribution mass of the particular owners.
There exist two scales:
• **Scale of value:** Percentage of the value of the contribution of the particular owner of the value of the contribution mass in total
• **Scale of area:** Percentage of the area of the contribution of the particular owner of the area of the contribution mass in total
Reallocation procedure

Distribution by value (Art. 57 BauGB):

- The Municipality has to value the parcels in the moment of contribution ($V_c \text{€/m}^2$) and distribution ($V_{dis} \text{€/m}^2$)
- Every owner shall be allocated parcels corresponding to the percentage of the value of his contribution of the value of the contribution mass in total
- The owners have to pay for the surplus value ($P_a$)
Reallocation procedure

Distribution by value (Art. 57 BauGB):

Formulas:

• Value of the Contribution Mass: $C_{ε} = \sum C_{iε} = \sum (C_{im^2} \times Vc_{ε/m^2})$
• Value of the Distribution Mass: $Dis_{ε} = \sum Dis_{iε} = \sum (Dis_{im^2} \times Vdis_{ε/m^2})$
• Quotient of distribution: $q = Dis_{ε} : C_{ε}$
• Target allocation: $Ta_{iε} = q \times C_{iε}$
• Payment for the surplus value: $Pa_{iε} = Ta_{iε} - C_{iε}$
• Adjustment: $Aj_{iε} = Ra_{iε} - Ta_{iε}$ (Ra = real allocation)
• Payment in total: $Payment = Ra_{iε} - C_{iε}$
Reallocation procedure

Distribution by area (Art. 58 BauGB):

- The Municipality has to value the parcels in the moment of contribution ($V_{c\text{ €/m²}}$) and distribution ($V_{dis\text{ €/m²}}$).
- The Municipality reallocate parcels to the owner whose value is equal to the value of his contribution.
- The owners have to pay in area for the surplus value.
Reallocation procedure

Distribution by area (Art. 58 BauGB):

Formulas:

- Appreciation in value in per cent: \( A_p \% = \frac{(V_{\text{dis}} \, \text{€/m}^2 - V_{c} \, \text{€/m}^2)}{V_{c} \, \text{€/m}^2} \times 100 \)
- Share of area in per cent: \( S_{h} \% = \frac{(V_{\text{dis}} \, \text{€/m}^2 - V_{c} \, \text{€/m}^2)}{V_{\text{dis}} \, \text{€/m}^2} \times 100 \)
- Quotient of distribution: \( q = 1 - S_{h} \% \)
- Target allocation: \( T_{a} \, \text{im}^2 = q \times C_{i} \, \text{im}^2 \)
- Adjustment in cash (+/-): \( A_{j} \, \text{€} = (R_{a} \, \text{im}^2 - T_{a} \, \text{im}^2) \times V_{\text{dis}} \, \text{€/m}^2 \)
- Distribution Mass for private owners: \( D_{\text{isp}} \, \text{m}^2 = C_{m} \, \text{m}^2 - S_{h} \, \text{m}^2 \)
- Part of the Municipality: \( M_{m} \, \text{m}^2 = S_{h} \, \text{m}^2 - d_{e} \, \text{m}^2 \)
Withdrawing, Alteration and Establishing of Rights (Art. 61 BauGB):

Within the procedure the following rights may be withdrawn, altered or established (examples):

- „Erbbaurecht“ (right to construct a building on land owned by another person),
- Option to repurchase,
- Easements,
-Usufruct,
- Land charges (e.g. life annuity),
- Mortgages.
Valuation by deduction

Two important criteria have to be taken into account:

• What are the costs of the development of the area?
• How much time takes the development process?
Valuation by deduction

Calculation (Part I)

Value of building land without any payment obligations \( V_{\text{noobli}} \)

- Costs of the construction of the local infrastructure including measures of ecological compensation \( - C_{\text{CI}} \)

- Costs of measures of ecological compensation (private constructions) \( - C_{\text{CEpm}} \)

- Purchase of parcels for the ecological compensation (private constructions) \( - C_{\text{CEpp}} \)

\[ \text{Value of building land with payment obligations for the construction of infrastructure and ecological compensation} = \frac{V_{\text{noobli}} - C_{\text{CI}} - C_{\text{CEpm}} - C_{\text{CEpp}}}{\text{Value of building land with payment obligations for the construction of infrastructure and ecological compensation}} \]
## Calculation (Part II)

\[ V_{\text{obliquon}} = V_{\text{obli}} - \text{De} \]

- Deduction for the area of the local infrastructure including the ecological compensation (public measures)

\[ = V_{\text{bplan},0} - \text{C} \]

- Further costs (surveying, negotiations, contracts)

- Suitable land for building following the legally binding land-use plan
Valuation by deduction

Calculation (Part III)

Suitable land for building following the legally binding land-use plan

- Discount factor depending of the waiting time until the parcel is suitable for building (N) and the property rate of interest (p) ; \( q = 1 + p \)

\[ V_{b\text{plan},N} = \frac{1}{q^N} \]

Suitable land for building following the legally binding land-use plan with a waiting time N
Valuation by deduction

Calculation (Part IV)

Suitable land for building following the legally binding land-use plan with a waiting time $N$

\[ V_{b\text{plan},N} \]

- Discount factor depending on the waiting time up to the resolution of the binding land-use plan ($M$) and the property rate of interest of land in development $p_E$ (taking into account the risk of failure of the binding land-use plan); $q_E = 1 + p_E$

\[ \frac{1}{q_E^M} \]

= Suitable land for building following the preparatory land-use plan with a waiting time $M$

\[ V_{p\text{plan},M} \]

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Valuation by deduction

Formula in total:

\[ V_{\text{pplan,M}} = \left( V_{\text{noobli}} - C_{\text{Cl}} - C_{\text{CEpm}} - C_{\text{CEpp}} - C \right) \times \frac{100 - \text{De}}{100 \times q^N \times q_{E}^M} \]
Valuation by deduction

Example:
Residential Zone following the preparatory land-use plan

<table>
<thead>
<tr>
<th></th>
<th>€/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vnoobli</td>
<td>300</td>
</tr>
<tr>
<td>CCI</td>
<td>25</td>
</tr>
<tr>
<td>CCEpm</td>
<td>5</td>
</tr>
<tr>
<td>CCEpp</td>
<td>5</td>
</tr>
<tr>
<td>Voblicon</td>
<td>265</td>
</tr>
<tr>
<td>De</td>
<td>20</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
</tr>
<tr>
<td>Vobli</td>
<td>214</td>
</tr>
<tr>
<td>Vbplan,0</td>
<td>204</td>
</tr>
<tr>
<td>N</td>
<td>4</td>
</tr>
<tr>
<td>p</td>
<td>5</td>
</tr>
<tr>
<td>Vbplan,N</td>
<td>167,83</td>
</tr>
<tr>
<td>M</td>
<td>10</td>
</tr>
<tr>
<td>pE</td>
<td>8</td>
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<tr>
<td>Vpplan,M</td>
<td>77,74</td>
</tr>
</tbody>
</table>
Facts:
The Municipality likes to reallocate the land property (compare map 1) to realize the planning following the legally binding land-use plan (compare map 2). For this purpose, the Municipality initiates the reallocation of property rights following Art 45 ff. BauGB.
Following the committee of valuation experts the suitable land for building following the legally binding land-use plan with a waiting time N has a value of 180 €/m² (value of contribution). The value of building land with payment obligations for the construction of infrastructure and ecological compensation is 240 €/m² (value of allocation).
Example

Map (Map of contribution)

(10 = Municipality)
Example

Map (legally binding land-use plan)

--- 110 m --->

(3632 m²)

Residential zone, maximum of two floors

Street (658 m²)

Residential zone, maximum of two floors

(3526 m²)
**Solution 1 (distribution by area):**

<table>
<thead>
<tr>
<th>Description</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution mass $C$ [$m^2$]</td>
<td>7394</td>
</tr>
<tr>
<td>Area of existing infrastructure $E$ [$m^2$]</td>
<td>422</td>
</tr>
<tr>
<td>Area of new infrastructure $N$ [$m^2$]</td>
<td>658</td>
</tr>
<tr>
<td>Distribution mass $D_{is}$ [$m^2$]</td>
<td>7158 (Dis=C+E-N)</td>
</tr>
<tr>
<td>Deduction of area $de$ [%]:</td>
<td>3,19177712 $(de%=(N-E)\times100/C)$</td>
</tr>
<tr>
<td>Share of area: $Sh% = $</td>
<td>25,0000000</td>
</tr>
<tr>
<td>$(V_{dis}\text{[€/m}^2\text{]} - V_{c}\text{[€/m}^2\text{]}) \times 100 / V_{dis}\text{[€/m}^2\text{]})$</td>
<td></td>
</tr>
<tr>
<td>$V_{c}\text{[€/m}^2\text{]}$:</td>
<td>240</td>
</tr>
<tr>
<td>$V_{dis}\text{[€/m}^2\text{]}$:</td>
<td>180</td>
</tr>
</tbody>
</table>
### Solution 1 (distribution by area):

<table>
<thead>
<tr>
<th>Procedure 1</th>
<th>Contribution</th>
<th>Target allocation (Ta)</th>
<th>Real allocation (Ra)</th>
<th>Difference</th>
<th>Difference in %</th>
<th>Adjustment in cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participant</td>
<td>Parcel</td>
<td>Area [m²]</td>
<td>Total area</td>
<td>Area [m²]</td>
<td>Area [m²]</td>
<td>Ra - Ta</td>
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<td>281</td>
<td>569</td>
<td>1459</td>
<td>1094</td>
<td>1132</td>
<td>38</td>
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<tr>
<td></td>
<td>286</td>
<td>890</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>282</td>
<td>1275</td>
<td>1275</td>
<td>956</td>
<td>1000</td>
<td>44</td>
</tr>
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<td>283</td>
<td>1711</td>
<td>1711</td>
<td>1283</td>
<td>1274</td>
<td>-9</td>
</tr>
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<td>4</td>
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<td>1155</td>
<td>866</td>
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<td>1794</td>
<td>1794</td>
<td>1346</td>
<td>1314</td>
<td>-32</td>
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<tr>
<td>10 (Municipality)</td>
<td>300 (Path)</td>
<td>422</td>
<td>422</td>
<td>1613</td>
<td>1540</td>
<td>-73</td>
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<td>Total:</td>
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<td>7816</td>
<td>7158</td>
<td>7158</td>
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Example

Solution 1 (distribution by area):

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<td>1</td>
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<td>2</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>1001 (566 m²)</td>
<td>1002 (566 m²)</td>
<td>1003 (500 m²)</td>
<td>1004 (500 m²)</td>
<td>1005 (632 m²)</td>
<td>1006 (434 m³)</td>
<td>1007 (434 m³)</td>
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Concept of allocation (distribution by area)

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<td>10</td>
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<tr>
<td>1014 (658 m³)</td>
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<tr>
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<td>4</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>1008 (449 m³)</td>
<td>1009 (449 m³)</td>
<td>1010 (657 m³)</td>
<td>1011 (657 m³)</td>
<td>1012 (642 m³)</td>
<td>1013 (672 m³)</td>
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</table>
Solution 2 (distribution by value):

<table>
<thead>
<tr>
<th></th>
<th>Balance</th>
</tr>
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<tbody>
<tr>
<td>Contribution mass $C \text{ [m}^2\text{]}$</td>
<td>7394</td>
</tr>
<tr>
<td>Area of existing infrastructure $E \text{ [m}^2\text{]}$</td>
<td>422</td>
</tr>
<tr>
<td>Area of new infrastructure $N \text{ [m}^2\text{]}$</td>
<td>658</td>
</tr>
<tr>
<td>Distribution mass $\text{Dis}[m^2]$</td>
<td>7158</td>
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</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$A \text{ [\e]}$:</td>
<td>1330920</td>
</tr>
<tr>
<td>$\text{Dis} \text{ [\e]}$:</td>
<td>1717920</td>
</tr>
<tr>
<td>$V_{\text{dis}} [\text{\e/m}^2]$ :</td>
<td>240</td>
</tr>
<tr>
<td>$V_{\text{c}} [\text{\e/m}^2]$ :</td>
<td>180</td>
</tr>
</tbody>
</table>

Quotient of distribution $q = \frac{\text{Dis}[\text{\e}]}{C[\text{\e}]}$ = 1,29077631

Dr. Andreas Hendricks
### Solution 2 (distribution by value):

<table>
<thead>
<tr>
<th>Procedure Number 1</th>
<th>Contribution</th>
<th>Target allocation</th>
<th>Surplus value</th>
<th>Real allocation</th>
<th>Difference</th>
<th>Difference</th>
<th>Payment in</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>Target allocation</td>
<td>Surplus value</td>
<td>Real allocation</td>
<td>in €</td>
<td>in %</td>
<td>total (in €)</td>
</tr>
<tr>
<td>Number of participant</td>
<td>Parcel</td>
<td>Area [m²]</td>
<td>Total area</td>
<td>Total value [€]</td>
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<td>93897,48</td>
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<tr>
<td>4</td>
<td>300 (Weg)</td>
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<td>422</td>
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<td>0,00</td>
<td>0,00</td>
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<tr>
<td>5</td>
<td>300 (Weg)</td>
<td>422</td>
<td>422</td>
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<tr>
<td>Total:</td>
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<td>7816</td>
<td>1330920,00</td>
<td>1717920,00</td>
<td>387000,00</td>
<td>1717920,00</td>
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</table>
Example

Solution 2 (distribution by value):

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
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<td>2</td>
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</tr>
<tr>
<td>1001 (693 m²)</td>
<td>1002 (693 m²)</td>
<td>1003 (627 m²)</td>
<td>1004 (627 m²)</td>
<td>1005 (496 m²)</td>
<td>1006 (496 m²)</td>
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<tr>
<td>1013 (658 m²)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1007 (577 m²)</td>
<td>1008 (577 m²)</td>
<td>1009 (577 m²)</td>
<td>1010 (577 m²)</td>
<td>1011 (577 m²)</td>
<td>1012 (641 m²)</td>
</tr>
</tbody>
</table>
Conclusion

- Standard procedure for the development of new building land in Germany
- The surplus value caused by the planning remains to the land owner, the part caused by the reallocation and new infrastructure remains to the Municipality
- The value capture may be realized in cash or in area
- The value of land in development is calculated by deduction from value of building land
Thank you very much for your attention!
Questions?