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Forestry in the Federal Republic of Germany

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TWENTY years ago I reported in “The Ames For ester” on German forestry. At that time the report could still be titled “Forestry in Germany”. Today, 20 years later, properly speaking one ought to draw up two reports, one concerning forestry in the Federal Republic and the other concerning forestry in the German Democratic Republic. Although it concerns the same forests as 20 years ago, essential differences could be outlined with regard to the aims of the economy and the forest organization. Only in the technique of forestry the differences might be of less importance, as the technique has its specific law and reasserts itself in all spheres against all differences in the politic, economic and social conceptions.

In the following I shall only deal with the forest conditions of the Federal Republic and try to state the essential facts and present problems.

Two main tasks, generally speaking, are set to forestry: the production of timber and the tending of forests. In timber production forestry acts as an economic enterprise of private or public character. The cultivation of the forests on the other hand serves the important tasks of forests in forwarding the public general welfare in regard to care of landscape, to soil protection, attention for the natural water supply and for the health resort of the human beings. These forest-care tasks come always clearer to the front, the more the technically industrial civilization with its conglomerates of human masses and its high differentiation and specialization improves itself in the different spheres of working. But, to begin with, let us have a look at the economic tasks of forestry in timber production in a more particular way.

The forest-economical fundamentals

The forest area of the Federal Republic comprises today not more than about 7 million hectares, compared to the status of approximately 13 million hectares of All-Germany in the year 1937. Roughly 3 million hectares wooded area belong actually to the territory of the German Democratic Republic and nearly 3 million hectares come under Polish administration in consequence of the separation of formerly German territories east of the Oder-Neisse. The production basis for timber in the market area of the Federal Republic amounts only to something more than half of the former production area, whereas today about ¾ of the population of All-Germany live in the territory of the Federal Republic. According to the decrease of production area the sustained annual yield amounts actually to about 23 mill. m³, compared with a sustained annual yield of 45 mill. m³ in All-Germany before the war.

The wood demand of the Federal Republic exceeds widely the production quota, and requires in consequence an annual timber import which reached in the last years approximately the pre-war level of 15 mill. m³.

In the year 1958 about 26 mill. m³ large timber were cut:

<table>
<thead>
<tr>
<th>Wood Type</th>
<th>Amount (Mill. m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad-leaved stem-timber</td>
<td>5.0</td>
</tr>
<tr>
<td>Conifer stem-timber</td>
<td>12.0</td>
</tr>
<tr>
<td>Conifer pit-props</td>
<td>2.0</td>
</tr>
<tr>
<td>Conifer stacked wood (above 7 cm top)</td>
<td>2.5</td>
</tr>
<tr>
<td>Broad-leaved stacked wood (above 7 cm top)</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Total about 21 mill. m³ large timber.

The remaining 5 Million m³ were dressed to firewood. Consequently the timber production came to about 80 per cent, whereby the bark is included in the converted large timber volume.

The sales-value of the yearly cutting amounts actually to about 1.7 milliards and is distributed as follows:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber conversion (Saw-mills, plywood and veneer-factories, wallboard and chipboard factories)</td>
<td>60.0</td>
</tr>
<tr>
<td>Furniture industry</td>
<td>13.6</td>
</tr>
<tr>
<td>Wood pulp and paper-industry</td>
<td>12.8</td>
</tr>
<tr>
<td>Other wood working industries</td>
<td>1.6</td>
</tr>
<tr>
<td>Firewood</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Timber prices

Of course timber prices have an important effect on the economic state of forestry. Many readers were perhaps informed, that timber prices in Germany were stopped as fixed prices from 1956 and, what is more, to a level which was too low compared with other prices for raw materials and finished products and compared with the world market prices for timber. Simultaneously with the transition to the free market economy and the release of the wood-import after the war the unfavorable prices for timber were suppressed. The wood prices rose and the domestic prices in Germany conformed themselves to the world market price. In 1953 the average proceeds for round logs of all kinds in the state forests amounted to about 57 DM. Till 1957 they rose to 70 DM. Against this the working expenses, i.e. the pure cutting costs per m³ (without other operating expenditure) increased from 8.50 DM in 1953 to 12-DM in 1957. In the year 1957 a fall in prices set in, which contributed highly to make the economic situation of the forest enterprises essentially worse, because at the same time wages and material costs continued rising.

The structure of ownership

The private forest enterprise especially are, hardly affected through the fall in prices, which is serious since 1957. Above all the large forest property, which is heavily burdened fiscally with the Equalization of Burdens Law and the Inheritance Tax, suffers from it. In this connection it is worth mentioning that after the war all owners of assets in the Federal Republic were burdened with an Equalization Tax in order to enable the process of integrating about 10 million refugees of the german territories in the east into the economic process of the Federal Republic. It is of exceptional importance for the political, economical and social development of the Federal Republic, that
this integration was successful. Taking this in account the sacrifices to make by the large private forest property for social reasons must be accepted in an affirmative sense.

About 59 per cent of the wooded area of the Federal Republic are in public ownership. Hereof about 32 per cent belong as state forests to the different Lands and about 32 per cent belong as community forests to towns and communities. 41 per cent of the forests are private forests.

Public forest property turned out very well enabling in the first place the fulfillment of the tasks external to the economical side of forestry as care of landscape, protection of water and soil. It must also be attributed to the public forests that wood production increased to more than the double amount since the middle of the last century; nevertheless the large forest property contributes also in the highest degree to increase growing stock and increment.

The still unsatisfactory output of the small forest property, in delete most Lands with exception of the industrial territory mainly farm forest, represents a forest economic problem of the first order. The reason for this remaining behind in yield must be attributed to the prevailing of smallest enterprises and to the fragmentation of these holdings into small forest working areas which are furthermore located in a scattered form. Sometimes a legal coercion to manage the small private forest in an intensive way is lacking. While the German Democratic Republic is on the point of removing the unprofitable forest plot management by means of abolishment of the private ownership and transition in producing co-operatives, the Federal Republic made it her object to conserve and to promote, so far as it is possible, the independent farms that are run by individual families. Every year important contributions in money are raised for the promotion of agriculture in the Federal budget. Within the framework of the arrangements of the "Green Plan", which serves mainly the improvement of the agrarian structure and the creation of independent farms that are run by individual families, monetary contributions are also granted for farm forestry. In this case afforestation of agricultural marginal earnings-soils, unsuitable pastures and waste lands is furthered. In the same way one tries to get larger forest working areas by means of redistribution of land and amalgamating separate plots into compact holdings. Forest integrations of one's own accord and the advisory action of the state forest administration offices shall improve the conditions of production in the small private forests. Of course progress can only be obtained slowly. Nevertheless the transitory raising of the wood prices 1954-1957 encouraged the economic efforts of the private forest ownership in a high degree.

Forest legislation

In the period of 1933 to 1945 endeavours were made to lead over the forestry to the central government. Such tendencies are not compatible with the principles of a federated structure of the Federal Republic grounded in the basic law of the Western German Federal Republic. Forest Economy and Forestry are in consequence, actually problems regarding the different Lands.

Since the end of the war different Lands were resolved to promulgate a new forest legislation. However these laws brought only a few innovations. Practically they anchored in a new form legally the principles concerning the care of forest and soils and prescribed them also in a binding way for private forestry. Here to belong also prescriptions deciding that regularly management plans must be worked-out and that trained foresters have to be employed for the administration and direction of forest enterprises. No alteration whatever has taken place concerning the arrange-
ment that in some lands the state forest offices manage the community forests and run the forest technical working by compensation of expenses. This regulation has turned out very well and by this means a guarantee could be reached, that the whole public forest is managed by experts. As a matter of fact the good cultivation conditions of these forests prove the rightness of these organizational measures.

The particular situation of forestry at present

Forestry of the Federal Republic is comprehended within the framework of the general economic and political situation of Germany. The efforts of the European countries to create common larger market areas are well known. Since the January 1, 1958 the agreement concerning the European Economic Community (Common Market) took effect, through which within the reach of the economic integrated nations a zone of free trade shall be created. The efforts of the Federal Republic aim at extending this zone of free trade and at providing a larger European market area which ought to be organized outwardly so much as possible in form of Free Trade, inwardly so little as possible in a protective form. In all probability the forestry of the Federal Territory will be exposed to the free play of the economic forces without special protection. A danger could proceed if the world market prices for raw wood still go deeper down and simultaneously the working expense increase further through advance of wages and enhancement of material and machine prices. For the time being such a danger seems not to exist, although German forestry has to rival to some extent with timber supplying countries, which are not accustomed to apply the severe criteria of a forestry managed according to the rules of sustained yield and careful treatment as it is usual in the German forest practice.

As already mentioned some difficulties for German forestry resulted in the last two years from the fact, that timber prices and working costs showed a contrary course development. The full employment of industry and trade lead to a further general raising of wages and prices, while the timber could not follow this tendency towards higher prices. It would be of importance to find out the reason for this ensued fall in prices. Are permanent changes in the utilization of timber the cause or are variations in the underlying trend the motive? As far as one can consider these occurrences without precise knowledge of the state of the market or relating to market policy, it is to suppose that real changes in the wood consumption have taken place. The utilization of full timber diminishes in favor of the wood as working material and starting material for processed product. By way of example this appears quite evident in the utilization of construction timber: In the Federal Republic we have, properly speaking, almost no wooden houses. Houses are built rather of bricks and artificial stones. However still a year ago wooden beam ceilings were used to a great extent, at present the rigid ceilings from steel and concrete prevail. Timber constructions are frequently only used in the roof truss. The conditions in other utilizations of raw timber are similar.

On the other hand the production of plywood and veneer factories, of wallboards and chipboards increases currently whereby the use of average bulk material prevails, for reasons of costs, at the expense of forestry.

German forestry must observe and consider very attentively these changes of timber utilization and timber sale. To examine the market situation and to influence it through publicity for timber utilization represent an important task at present and for the future. To orientate the cultural aims according to the fluctuations of the market situation and the wood consumption is of course very difficult as it is nearly impossible to foresee the demand for sorts and quality for such a long period as forest economic production is used to.
State of the different scopes of duty in forestry

a) Silviculture —

While just before, during and after the war approximately 200 percent of the forest increment was cut, actually the rate of cutting in the Federal territory is now reduced to the normal sustained annual yield. In 1947 50 mill. m³ of large timber were cut, but in 1958 the cutting rate was about the sustained annual yield and amounted to 25 mill. m³. This radical shortening of the cut was necessary in order to close the gaps in the growing stock and to prevent a decrease of the increment. In 1941 500,000 hectares clear-cut areas existed corresponding to about 6 percent of the wooded area. With great efforts these clear-cut areas were re-afforested in the past 10 years. As for the tending of the stands the normal conditions are reestablished.

The new endeavours in silviculture tend to get an exact glimpse into the site conditions and to orientate silviculture according to ecologic conditions by means of soil-inventory. In the regeneration of crops one avoids schematic methods and reproduction procedures and tries to get to a more individual treatment of land. Soil protection, cultivation of the stands and careful tending of the whole forest are generally the most important aims of modern silviculture. Likewise forest science and practice are dealing with the question of fertilizing and plant breeding.

b) Forest management

For more than 150 years forest laws in the different Lands of the Federal Republic prescribe that the management of forests has to be carried out in a sustained way according to working plans which have to be renewed periodically. The last time the forest management technical notions were standardized into an international working group. The rest of the different countries of Europe have their own prescriptions and directions for forest management. These management-instructions are in general valid for all public forests and are also used in a similar way on the part of the large private forest ownership.

The Land Baden-Württemberg provided this year, a new official direction for forest-management. It comprises detailed instructions concerning the ascertainment of forest-state (soil and stands) and the working plans. A new assessment of the growing stock by species and by quality class has to be stated every 10 years. Such repeated stock-inventories enable us to observe the development of the growing stock with regard to quantity and quality. The efficacy of the timber output is guaranteed through ascertainment of the current and mean annual increment, through assessment of the species and age-class distribution in the different stands. Single prescriptions concerning the formation, the tending and the yield to get from the different stands, the choice of species, the diameter to aim at, the rotation and the assessment of the order of succession in cutting stands, shall render possible a well-planned working group and will serve to increase the output. Moreover the essential conditions of the different forest workings are laid down in maps and surveys. The endeavours of the forest science tend not only to improve the ascertainment of the ecologic and growing conditions by means of developing modern statistical methods, but also to reduce the costs of such a performance.

Root and soil studies in silviculture.
c) Forest Protection

The efforts for sheltering forests from damage, caused by game and injurious insects are, well to the fore of the forest protection measures. The expenditures realized by the forest districts for this purpose amount annually in Baden-Württemberg to about 7. DM per hectare. The valuable young growth is protected against browsing by game by means of fences. Nevertheless also single measures are taken every year to protect the plants in the young growth against browsing by game in the period of snow lying.

Protection measures to prevent diseases caused by fungi through use of chemical means belong to the regular forest-protection technical works. On account of the danger occurring with the use of poison, experiments with regard to a biological pestology are carried out in an increasing extent. Here the efforts to repress special forest-noxious insects through multiplication of the red forest-ant must be mentioned.

Damages through forest fire do not play a decisive part on the territory of the Federal Republic. This is because of a dense net of forester and forest-guard districts extended in every direction. On the other hand damages by wind fall and snow-break inflict again and again important losses to the forest. Above all the conifers, spruce and pine, are especially exposed to danger. Only by means of careful treatment and tending and through avoiding to plant shallowrooted and gale-endangered species on soils with stagnant water a counteraction can be reached.

d) Work in the forest.

The use of mechanization is increasing in German forestry. It is difficult to get the indispensable number of woodworkers. Indeed on account of the careful cutting of the forests as it is usual in Germany, certain limits are drawn to the employment of machinery on a large scale. In road construction and hauling the use of machines increases.

All forest administrations pay high attention to the training of their permanent woodworkers. The wood work is considered as a profession which requires a regular apprenticeship and education. The permanent woodworkers are trained in woodwork-schools and about 30,000 permanent woodworkers. Besides that, small farm owners and women work regularly or temporarily in the forest.

The forest-worker wages increased since 1945 considerably. By this means it was possible to remain in competition with industry and trade and prevent their migration from the country; thus maintain for forestry the necessary labor force. At present the wages per hour of a skilled forest work-

er amount to about 2.10 DM. The earnings for piecework are 20-25 percent higher.

At the beginning of this report it was alluded to the tasks external to the economy of forestry. They relate to the influence of forestry on the formation of landscape, the water economy, the maintenance of soil fertility and on the importance of forests for the human being, his health and recreation. More and more the conviction gains ground that the forests represent the last important vital sphere of the free nature in our civilized world. In this place animals and plants find a last reservation. In the woods man still encounters the living nature which has no immediate connection to his human existence. Hence lives in each forester the sentiment for animals and plants as ensouled living beings and creatures.

Perhaps it is here, that we feel our deepest love for the forest and for our work in the woods. Here all men are called upon not to be the destroyers of the forest and nature, but to preserve and to protect them. To serve the forest is our finest task, wherever in the world we are acting as foresters.