

Forest Research and Management Organization
(National Research and Development Agency) (Water Source Forest Account)

<https://www.ffpri.affrc.go.jp/>

1. Summary of operations implemented using FILP funds

Forestation for Water Conservation (The Forest Research and Management Organization, aiming at conserving headwaters, bears expenses for the project to plant water reservoir forests, conserve water resources indispensable to people's lives, preserve national land and prevent global warming in private sector forests where planting cannot be advanced only through forestry production activities under forest owners' own initiatives, although planting is necessary.)

Note: Operations not eligible for FILP include the expenses for planting since FY2002.

2. Amount of lending under FY2022 FILP

(Unit: billion yen)

FY2022 FILP	Estimated outstanding amount of FILP lending at the end of FY2021
4.9	99.1

3. Estimated policy cost analysis of the project

(1) Policy cost (Unit: billion yen)

Category	FY2021	FY2022	Fluctuation
1. Government expenditure (subsidies, etc.)	2.9	2.7	-0.2
2. Government revenue (payments to the government, etc.)*1	-	-	-
3. Opportunity cost of capital investments, etc.	731.3	720.8	-10.5
Total (1+2+3=policy cost(A))	734.1	723.4	-10.7
Analysis period (years)	89 years	89 years	-

(2) Breakdown of policy cost by the time of the provision of funds (Unit: billion yen)

Category	FY2021	FY2022	Fluctuation
(A) Policy cost (previously cited)	734.1	723.4	-10.7
1) Opportunity cost of capital investments, etc. provided before the beginning of the analysis period	353.7	428.2	+74.5
2) Policy cost expected to be newly accrued during the analysis period	380.4	295.2	-85.2
Government expenditure (subsidies, etc.)	2.9	2.7	-0.2
Government revenue (payments to the government, etc.)*1	-	-	-
Opportunity cost of surplus, etc.	327.9	240.4	-87.5
Opportunity cost of capital investments, etc.	49.7	52.2	+2.5

(4) Sensitivity analysis (cases where assumptions change)

(Unit: billion yen)

(A) Policy cost (previously cited)	Case before the negative interest rate policy*2	Fluctuation	1. Government expenditure (subsidies, etc.)		
			2. Government revenue (payments to the government, etc.)*1	3. Opportunity cost of capital investments, etc.	
723.4	749.9	+26.4	+1.8	-	+24.7
(A) Policy cost (previously cited)	Case of a 1% decrease in operating revenues	Fluctuation	1. Government expenditure (subsidies, etc.)		
			2. Government revenue (payments to the government, etc.)*1	3. Opportunity cost of capital investments, etc.	
723.4	725.0	+1.5	+0.0	-	+1.5

(Note) Components in each column may not add up to the total because of rounding.

*1 Government revenue (payments to the government, etc.) is booked as a negative amount. Example: -10 b. yen for 10 b. yen in payments to government, etc.

*2 Assumed interest rates (discount factor and future interest rate) are based on the market yield on Japanese government bonds on January 28, 2016, before the introduction of the negative interest rate policy.

(3) Year-to-Year comparison analysis

(Computing any fluctuation from previous year)

(Unit: billion yen)

Policy cost	Comparison	FY2021	FY2022	Simple fluctuation
		Simple comparison (before adjustment)	734.1	723.4
Past year comparison (after adjustment)	1) Adjusting initial years (Analysis results after adjusting initial year to that for FY2022 analysis)	733.2	719.0	-14.2
	2) Adjusting assumed interest rates (Analysis results of re-estimation using assumed interest rate for FY2021)			Real fluctuation (2-1)

[Real fluctuation factor analysis]

○Factors behind policy cost increase

-None

○Factors behind policy cost decrease

- Decrease in cost due to an increase in revenue from sales of timber from developed forests (-14.2 billion yen)

4. Outline of estimation and project prospect employed in the analysis

[Outline of estimation]

- 1) Regarding the Forestation Project for Water Conservation out of the various projects undertaken by the Organization, the analysis covers the operating expenses for a period ending when the portions of the project that had started by FY2001 will be completed. In the project, expenses were calculated in regard to the following works: The afforestation and water source special forests development projects which have started in FY2002 and thereafter, are excluded from the analysis because they are fully subsidized. Therefore, the forest development and management expenses of approx. 404,000 hectares which were afforested in and prior to FY2001 are calculated until the completion of the project. (Total operating expenses in FY2022 and thereafter: 269.2 billion yen)
- 2) The analysis period: 89 years until all lumbering is completed (89 years in FY2021).
- 3) Operating revenue (revenue from sales of timber from developed forests) is estimated based on the most recent timber prices
- 4) The simulation of the future development of the projects has been done based on assumptions set based on the above-described way of thinking. Then, the amounts of investment, subsidies and grants-in-aid required for the implementation of these projects are calculated based on the simulation.

[Project prospect]

The required expenses are covered by financial resources including capital investment and loans until FY2040. Subsequently, revenues from the sale of timber from developed forests will be gradually used as the fund source for loan repayments. The period during which revenues from the sale of timber from developed forests are expected is until FY2110, when land afforested in and prior to FY2001 is expected to have matured and have been deforested.

(Unit: billion yen)

FY	Result				Estimated 2021	Planned 2022	Assumptions for calculation	
	2017	2018	2019	2020			2023-2110	
Operational income	0.66	0.57	0.62	0.56	0.51	0.69	216.1	Based on harvest schedule

*Operational income does not include compensation for administrative expenses related to sales and contract cancellation.

5. Reasons for granting of subsidies, mechanism and underlying laws

This is a public project for the development of forests at water source locations as parts of protected forests, such as non-forest, sparsely wooded land and degraded forestland, for the purpose of securing stable water resources and preserving national land. Therefore, for the project expenses, excluding internal revenue sources, the project accepts capital investments (2/3 of expenses for planting before FY2001) and subsidies (the entirety of the expenses for planting and growing since FY2002 and for special measures for water source forests, as well as the amount equivalent to 2/3 of interest payable on loans) from the General Account.

[Underlying laws and regulations]

(Capital investment)

"Act on the Forest Research and Management Organization, National Research and Development Agency"

(Capital)

Article 6: The capital of the Organization shall be the amount of funds provided by the Government as provided for in Article 5, Paragraph 2 of the Supplementary Provisions of the Act.

2 The government may grant the Agency additional funding if deemed to be necessary within the scope provided for in the budget.

3 (Omitted)

(Subsidies)

Budgetary measure

(Payments to the National Treasury)

"Act on the Forest Research and Management Organization, National Research and Development Agency"

Article 17: After the disposition related to the last business year of the medium- to long-term objective period prescribed in Article 35-4, paragraph (2), item (i) of the Act on General Rules (hereinafter referred to as the medium- to long-term objective period in this paragraph and paragraph (4)) based on the provisions of Article 44, paragraph (1) or (2) of said Act, in each account related to the operations described in the preceding Article, items (i) and (ii), and if there are reserve funds specified in paragraph (1) of said Article, the Organization may appropriate the amount approved by the Minister of Agriculture, Forestry and Fisheries among the amount corresponding to such funds to the operations prescribed in Article 13, paragraph (1) during the next medium- to long-term objective period as provided by the medium- to long-term plan approved under Article 35-5, paragraph (1) of said Act concerning the next period of such medium- to long-term objective period (when the approval was obtained on the revisions according to the latter clause of Article 35-5, paragraph (1) of said Act, then as provided by the revised version).

2 When the Organization has a surplus after deducting the amount approved in paragraph (1) from the reserve amount stipulated in the same clause, it shall pay the surplus to the national treasury.

3 to 5 (Omitted)

6. Special remarks

None

(Reference) Outcome and social and economic benefits of operations

In Forestation for Water Conservation, the afforestation project in private water source forest areas totaling 488,000 hectares was completed by the end of FY2021.

The estimates on the beneficial effects for the 404,000 hectares of planted area (the total area targeted for mid-term assessment from FY1961 to FY2001 (Afforestation and water source forest special development projects that are carried out in FY2002 and thereafter are fully subsidized.)) based on the "Guidelines for Implementation of Evaluation on Afforestation Public Projects" indicates about 12,484.1 billion yen for the total expenses and 17,426.8 billion yen for the total benefits.

The following is the breakdown:

- (1) Water source development and protection effect (flood prevention, water preservation at watersheds, water purification): 12,065.6 billion yen
- (2) Mountain terrain preservation effect (soil outflow prevention, mudslide prevention): 4,065.1 billion yen
- (3) Environment preservation effect (carbon fix): 1,150.0 billion yen
- (4) Timber production effect (securing and facilitation of timber production): 146.1 billion yen

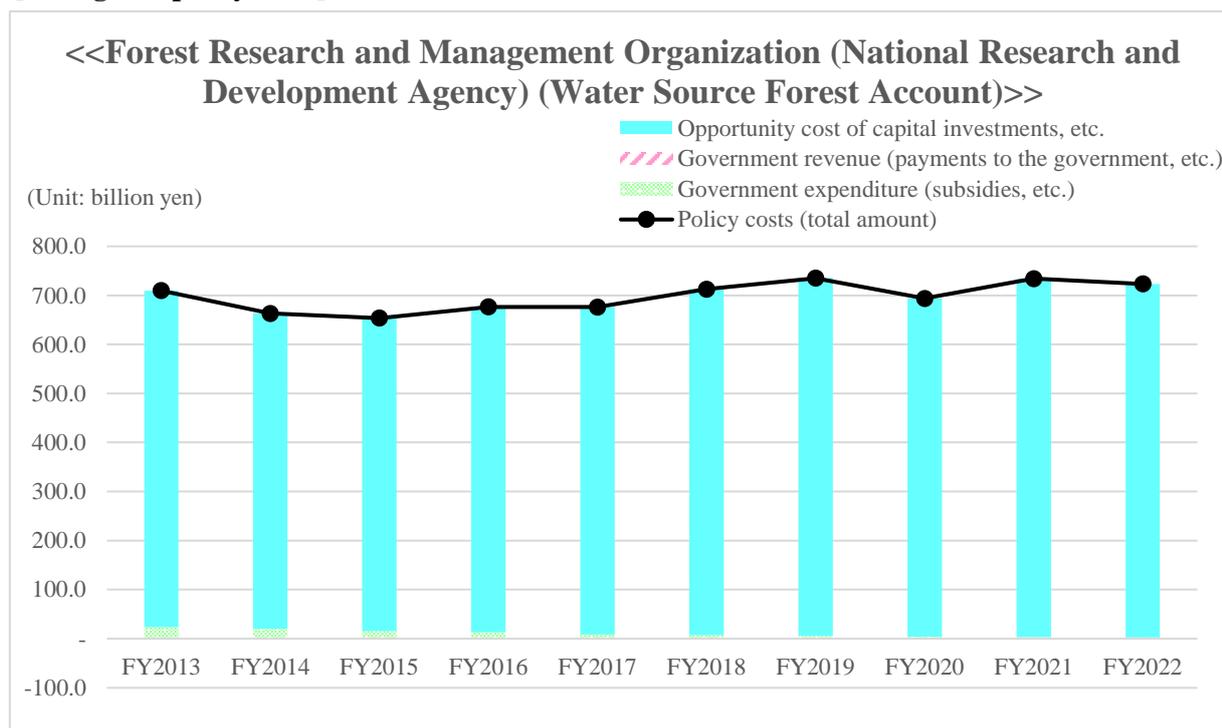
Albeit the difficulty in obtaining a quantitative measurement of the benefits generated by the operations in and after FY2022, the benefit can be estimated as follows with a certain condition and based on the aforementioned amount of the impact;

in the case where the social discount rate is set to 4%: 1,836.8 billion yen

in the case where the social discount rate is set to that of the policy cost analysis: 2,834.3 billion yen

Overview of policy cost analysis results

[Changes in policy costs]



Notes 1. Policy costs for each fiscal year differ in assumptions including interest rates applied to estimates.

2. Figures until FY2016 indicate the policy cost of Forestry and Forest Products Research Institute.

(Unit: billion yen)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Policy costs (total amount)	709.6	663.1	653.8	676.3	676.1	712.5	735.4	693.7	734.1	723.4
Government expenditure (subsidies, etc.)	23.0	19.7	15.7	13.0	8.3	7.1	5.8	3.7	2.9	2.7
Government revenue (payments to the government, etc.)	-	-	-	-	-	-	-	-	-	-
Opportunity cost of capital investments, etc.	686.5	643.4	638.1	663.2	667.8	705.4	729.6	690.0	731.3	720.8

【Explanation of policy cost trends】

- As the forestation project for water conservation in and before 2001 is subject to analysis and the total project cost remains almost unchanged, total investments accepted by the Organization that accepts investments covering a portion of the project cost remain almost unchanged. Therefore, no major fluctuations are seen in policy costs.

- Policy costs fluctuate due to interest rate changes over the long policy cost analysis period (89 years) for the long-term forestation project for water conservation.

【FILP agency's self-assessment of policy cost analysis results (FY2022)】

- The policy cost in FY2022 decreased by 14.2 billion yen from the previous year in real terms due to a rise in afforestation tree sales revenues accompanying a wood price hike. It is believed that there is no particular problem. The results of the sensitivity analysis (case before the negative interest rate policy) showed an increase of 26.4 billion yen in the policy cost due to the effects of the discount factor and other assumptions. In the sensitivity analysis (case for a 1% decrease in operating revenues), the policy cost increased by 1.5 billion yen due to the effects of revenue assumptions. Given these results, no particular problem was recognized.

(Reference) Financial Statements

Balance Sheet

(Unit: million yen)

Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)	Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)
(Assets)				(Liabilities and net assets)			
Current assets	9,417	8,699	9,349	Current liabilities	10,252	9,736	9,568
Cash and bank deposits	8,659	8,017	8,579	Short-term borrowings	9,602	9,344	9,112
Prepaid expenses	16	16	16	Lease liabilities (short-term)	20	21	14
Accrued income	0	0	0	Accrued payments	344	141	217
Contra-accounts for provision for bonuses	214	205	199	Accrued expenses	10	10	10
Other current assets	528	462	556	Deposit received	18	16	16
Fixed assets	1,096,693	1,131,966	1,148,750	Provisions			
Tangible fixed assets	1,096,469	1,131,767	1,148,574	Provision for bonuses	214	205	199
Water source forest	1,095,096	1,130,424	1,147,258	Other current liabilities	43	-	-
Buildings	6	4	4	Fixed liabilities	96,451	92,228	87,951
Structures	23	20	16	Contra-accounts for assets liabilities			
Tools furniture and fixtures	75	51	27	Contra-accounts for assets funded by subsidies, etc	140	106	77
Land	1,269	1,269	1,269	Long-term borrowings	93,993	89,749	85,537
Intangible fixed assets	96	70	48	Lease liabilities (long-term)	35	14	-
Trademark rights	1	0	0	Provisions			
Software	95	69	47	Provision for retirement benefits	2,284	2,358	2,336
Telephone subscription right	0	0	0	(Total liabilities)	106,703	101,964	97,519
Investment and other assets				Capital			
Security deposit and guarantee	129	129	129	Government investment	772,943	782,784	792,396
				Capital surplus	223,961	253,207	265,474
				Capital surplus	240,975	271,660	286,215
				Other administrative costs accumulated			
				Amount equivalent to accumulated net gains or losses on sale or disposal (-)	- 17,014	- 18,452	- 20,741
				Retained earnings	2,504	2,710	2,710
				Reserve fund carried over from the previous Mid-term Objective period	-	2,154	1,696
				Reserve fund	1,740	-	556
				Unappropriated income for the current year	764	556	457
				(Of this, gross profit)	764	556	457
				(Total net assets)	999,407	1,038,701	1,060,580
Total assets	1,106,110	1,140,665	1,158,099	Total liabilities and net assets	1,106,110	1,140,665	1,158,099

Note: Components may not add up to the total because of rounding.

Income Statement

(Unit: million yen)

Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)
Ordinary expenses	2,201	2,485	2,727
Cost of forestation activities	109	42	50
Administrative expense related to sales from and termination of forestation activities	535	914	866
Water reservoir forest service expense	26	24	29
Administrative expenses for reconstruction promotion	35	42	33
General and administrative expenses	808	934	1,290
Finance expenses	682	530	458
Miscellaneous losses	5	0	0
Ordinary income	2,569	2,692	2,726
Revenues from forestation activities	401	271	114
Compensation for administrative expenses related to sales from and termination of forestation activities	545	790	810
Reversal of contra-accounts for assets by subsidies	27	34	29
Revenue from national treasury subsidies, etc.	1,087	1,109	1,286
Revenue for water reservoir forest service cost	3	2	3
Income regarding contra-accounts for provision for bonuses	38	35	34
Financial income	0	0	0
Miscellaneous income	468	451	450
Ordinary profit or loss	367	206	- 1
Net profit or loss	367	206	- 1
Reversal of reserve fund carried over from the previous Mid-term Objective period	397	350	458
Gross profit	764	556	457

Note: Components may not add up to the total because of rounding.