# U.S. Forestry Incentives Program

## Introduction

There are a variety of national and state incentive programs that encourage reforestation, afforestation and active forest management on private lands in the United States. Most programs offer technical and/or financial assistance to landowners who manage their properties to produce public (e.g. carbon sequestration), as well as private benefits. Some states offer real property tax deductions and/or deferrals to landowners who replace or maintain forest cover.

Many of the federal programs addressing afforestation in the USA are also targeted at achieving conservation objectives on agricultural land and at taking marginal agricultural lands out of production. The U.S. Farm Bill provides for several programs that provide, or provided, incentives to landowners to afforest lands or to better manage forested lands. Under the Forestry Incentives Program (FIP), the federal government paid up to 65% of the costs of tree planting and stand improvement to a maximum of $10,000 per year, provided the landowner agreed to maintain practices for at least 10 years.

In the 1990 farm bill, sunset provisions were added that would replace FIP with the broader-purpose Stewardship Incentive Program (SIP) by December 31, 1995. FIP was scheduled to terminate on December 31, 1995, under provisions of the 1990 Farm Bill. Originally, Congress had intended that SIP would replace FIP after its sunset date, but the 1996 Farm Bill extended FIP to the year 2002.

On May 13, 2002, the 2002 Farm Bill de-authorized the Forestry Incentives Program (FIP), with funds remaining on May 13, 2002 to be exhausted through FIP closeout, primarily funding the existing contractual backlog.

Reasons for the termination of FIP aren't clear, but it seems that they may have been largely politic, and that some people simply started questioning the need for any more increases in wood supply. The program was widely considered to have been successful in what it set out to accomplish.

The Forest Land Enhancement Program (FLEP), which is integrating conservation values into the program, has now replaced both the Forestry Incentives Program and the Stewardship Initiatives Program (SIP). This federally funded program is a voluntary program for non-industrial private forest landowner. It provides for technical, educational, and cost-share assistance to promote sustainability of non-industrial private forest lands.

## Why did the U.S. develop this Instrument?

Historically, there have been increasing pressures on non-industrial private forest landowners to produce a multitude of goods and services from their forest lands. Pressures from development, land cost increases and their frequently associated tax increases, along with pressure to meet the market demand for wood products in the wake of supply reductions from Federal public lands are all converging on private woodland owners. Failure to provide incentives and assistance to reinvest in, reforest, and manage these lands can lead to resource impairment that could take decades to repair. In some regions of the country, cost-share programs are necessary to get landowners to consider the use of forestry practices to cope with existing resource problems. Conservation practices on lands in the Midwest are prime examples.

The Forestry Incentives Program was enacted in 1973 to increase the timber supply in the United States by increasing tree planting and timber stand improvement on non-industrial private forest lands. Timber harvest reductions on public lands in the West, environmental constraints on private lands throughout the U.S., and increased demands for wood fibre were, and continue to be, concerns about the nation's timber supply that prompted the establishment of this fund.

## How does this Mechanism Operate?

Congress authorized a $25 million per year for FIP, starting in 1974. Actual appropriations ranged from $10 to $15 million per year. An average of 160,000 acres was planted and another 80,000 acres of timber stands were treated under FIP each year. The average cost-share rate under the Program for tree planting was around $56/acre between 1974 and 1992. The federal cost-share rate commonly amounted to around 50% and ranged up to 65%.

From its inception through 1994, FIP cost-shares of more than $200 million funded approximately 3.32 million acres of tree planting, 1.45 million acres of timber stand improvement, and 0.27 million acres of site preparation for natural regeneration on the nation's non-industrial private forest lands. As of 1992, about 73% of the total area of FIP accomplishments occurred in the South, 22% in the Northeast and North Central region, 3% in the Pacific Northwest, and the balance was distributed throughout the country (Graddis et al., 1995).

The South accounted for around 90% of the program's tree planting activity, with 10 southern states each planting more than 178,000 acres of trees since 1974. In addition, Oregon and Washington combined planted about 90,000 acres of trees under the program. Timber stand improvement (tsi) practices were distributed throughout most forested states, with 55% in the Northeast and North Central states, and 38% in the South. Arkansas led the nation in tsi, followed by the Midwest states of West Virginia, Missouri, Ohio, and Indiana.

Tree planting cost share expenditures and area treated were greatest in the early 1980s, with more than 200,000 acres planted per year. Later years have had planting rates of 150,000 to 175,000 acres annually. Tsi cost-share finding and acres treated were greatest in the initial years of the program, and range from about 30,000 to 40,000 acres annually in the last decade.

Average government payments per acre for FIP activities increased throughout the 1970s when 75% cost-share rates prevailed. They decreased markedly in the early 1980s as most states changed to a 50% cost-share payment rate. Payments later increased, as inflation has increased treatment costs, decreasing the real FIP appropriations.

Secondary impacts of the program have included development of private contracting vendors, increased softwood shares of regional timber supply, and sustaining forest products manufacturing firms.

### *How did the FIP involve the private sector?*

FIP was a nationwide program available in counties designated on the basis of a Forest Service survey of total eligible private timber acreage that is potentially suitable for production of timber

products. Federal cost-share money was made available, with a limit of $10,000 per person per year, with the stipulation that no more than 65 percent of the cost may be paid.

FIP was intended to assure the Nation's ability to meet future demand for sawtimber, pulpwood, and quality hardwoods by planting more trees and placing more forest land under good forest management. FIP's cost sharing for these measures helps eligible private landowners, whose small parcels represent the majority of the Nation's forest lands.

To be eligible for cost-share assistance under FIP, a landowner had to:

- Own no more than 1,000 acres of eligible forest land. In the public interest, the Secretary of Agriculture could grant an exception for larger acreages;
- Be a private landowner of a non-industrial forest. Individuals, groups, associations, or corporations whose stocks were not publicly traded could have been eligible for FIP, provided they were not primarily engaged in the business of manufacturing forest products or providing public utility services;
- Have land that was suitable for conversion from non-forest land into forest land (afforestation); for reforestation; or for improved forest management; and
- Have land that was capable of producing marketable timber crops and met minimum productivity standards established for FIP.

The State forester provided technical advice in developing a forest management plan and helped landowners to find approved vendors, if needed, for completing the FIP work. In addition, the State forestry agency had to certify that the project had been completed satisfactorily before cost-share payments could be made.

With FIP, the landowner was under no obligation to pay back any of the cost share money when the forest is harvested in the future. His or her only obligation was and is to keep the planted trees on the ground for at least 10 years. Essentially, the landowner gets to establish a forest for half of the cost while keeping all of the income from harvesting the forest.

### *How was the program carried out?*

The Natural Resources Conservation Service in cooperation with the Forest Service and forestry agency in the state administered the Forest Incentives Program. The landowner first filed an application with the local office of the Natural Resources Conservation Service to apply for the FIP cost share. When the state office of the Natural Resources Conservation Service received the application from its local office it notified the forestry agency in the state to conduct a field inspection of the site that the landowner was requesting cost share. The service forester then verified the acreage involved, determined the condition f the site, and specified the appropriate silvicultural activities for the Forestry Incentives Program cost share. Three silvicultural activities were eligible under the Forestry Incentives Program,

- Site preparation and tree planting,
- Site preparation for natural regeneration, and
- Timber stand improvement.

When the state office of the Natural Resources Conservation Service received its allocation from its headquarters in Washington, D.C., it, in turn, allocated the funds to the local offices. The local office then allocated the funds to the applicants, usually on a first come first serve basis. To

ensure that as many landowners received the cost share as possible, only landowners with less than 1,000 acres were eligible for the Forestry Incentives Program. For most of the states the cost share was 50% of the eligible reforestation activities. Each landowner could receive a maximum of $10,000 of cost share per person per year. To ensure some level of efficiency, the Forestry Incentives Program had a minimum acreage requirement of 10 acres.

After the landowner received the notification from the local office of the Natural Resources Conservation Service that his application had been approved, he or she then proceeded to carry out the reforestation program as specified by the service forester, either by himself or herself, or by hiring a contractor. When the regeneration job was completed, the landowner was required to file a completion report along with all the receipts with the local office of the Natural Resources Conservation Service.

Upon receipt of the completion report, the local office of the Natural Resources Conservation Service then notified the forestry agency of the state to conduct a compliance inspection. At this point, the service forester carried out the compliance inspection to ensure that the specified silvicultural activities had been carried out satisfactorily. When the local office of the Natural Resources Conservation Service received the compliance inspection report of a satisfactory inspection, the cost-share money was released to the landowner.

As an example, in the state of Maryland, to be eligible for FIP funding the landowner had to own between ten and 1,000 acres of eligible forest land; be a private landowner of a non-industrial forest; have land that was suitable for conversion from cropland into forest land; for reforestation; or for improved forest management; and have land that was capable of producing marketable timber crops and met minimum productivity standards established for FIP. FIP then covered up to 65% of the costs of tree planting, timber stand improvements, and related practices on non-industrial private forest lands. There was an annual cost-share payment limit of $10,000 per person. A ten-year minimum maintenance agreement was also required. There was open enrolment for this program.

### *What was the rate of return?*

Evaluations of the program between 1974 and 1994 (Gaddis et al., 1995) indicate that it had been successful and efficient in meeting its objective. Ninety percent of the funds allocated to FIP actually went toward performing practices in the field, because the federal and state agencies administered the program as part of their overall responsibility. Timber supply was projected to increase by more than 1 billion cubic feet each year due to the program. Public and private rates of return averaged about 10% for the various public and private accounting criteria, and program benefit-cost ratios consistently exceeded 1.0 by a substantial margin and federal income taxes on the timber harvests stemming from FIP plantings were projected to eventually be more than double the annual federal FIP expenditures.

Other studies by Mills and Cain (1978) and Risbrudt and Ellefson (1983) came up with similar results, estimating that the social (i.e., covering both private and public costs) internal rate of return for the program ranged from 8.3% to 9.4% in real terms, and that the total benefit-cost ratio was 1.0 or greater.

During the period examined under the study by Gaddis (1995), more than $200 million was spent to pay for the cost share of roughly 3.32 million acres of tree planting, some 1.45 million acres of timber stand improvement, and around 0.27 million acres of site preparation for natural regeneration on non-industrial private forest lands. By 1992, about 73% of the total area of FIP

accomplishments occurred in the South, 22% in the Northeast and North Central region, 3% in the Pacific Northwest and the balance distributed throughout the country (Gaddis et al. 1995).

Another study in 1993 indicated that retention rates for FIP exceeded 92% for the duration of the program. Overall, the accomplishments of the program and the economic evaluations of its activity indicate that it had been successful at increasing forest planting and improvement practices and was also economically efficient. It increased timber supplies and provided acceptable financial returns for both the public and for private forest landowners who participated in the program.

Moreover, other studies (Alig et al. 1980, Kurtz et al. 1996) have indicated that private landowners tend to retain most of government-subsidized afforestation and other plantations well beyond the program life (Alig, 2003).

## What is required for this mechanism to work?

The FIP contained many elements that may be instructive for the development of a carbon-based fund targeting afforestation in other countries. Rates of return for the program are encouraging, although many of these results are found in the south, where growths rates (and thus returns) are higher.

Further examination of the differences between a given country's landowners and growing conditions with those of their U.S. counterparts would therefore need to be undertaken in order to cater any such program to different country's needs and realities.

Nonetheless, the FIP is particularly attractive due to its ability to reduce both government, and landowner, risk by aggregating fund recipients to a large scale. This structure also allows the Fund to achieve other economies of scale through the concentration of forestry specialists whose expertise is made available to Fund recipients.

## What basic elements are needed?

### *Emphasis on financial returns*

Much of the success of the FIP was concentrated in the Southeast of the country (upwards of 90%), where growth rates tend to be high, and rotation ages can be in the 10-15 year range. In some countries, or regions, growth rates may not be high enough to achieve similar benefit-cost ratios.

Plantation viability, then, may not be as good in some biogeoclimatic zones, unless suitable fast-growing species are identified, or some form of cost-sharing is undertaken. Clearly, standards for eligibility would have to be clearly defined, and an analysis of break-even zones would need to be clearly identified.

### *Quantification of non-market benefits*

In the absence of high-enough financial returns for landowners and investors, governments may find that they have justification for some form of cost sharing or joint venture agreements by evaluating the non-market benefits associated with afforestation. While this does not seem to have been a part of the FIP's program, its successor is attempting to emphasize these benefits.

### *Provision of extension services*

One thing that the FIP seems to have done well is to provide extension services to landowners, particularly to those who may not have otherwise participated in afforestation activities. The provision of such services is likely be an important part of any similar afforestation program.

In countries where this infrastructure does not currently exist on a large scale, such services could be provided through some related government corporation or through direct support for local forestry cooperatives.

### *Creation of a lending infrastructure*

As in the US, countries wishing to pursue such a program would need to create an infrastructure for both grant/loan approval and for the distribution of funds. Such a system could be built on existing government forestry agencies, or could be an independent structure designed specifically for the purpose.

The distribution of funds could then be managed through the same body, or an arrangement could be made through commercial lending institutions in order to reduce overhead.

A system using farming or forestry cooperatives might also be considered.

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