

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

October 11, 2013

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST APPROVAL OF A FOREST STEWARDSHIP AGREEMENT WITH SAIVA SIDDHANTA CHURCH TO PARTICIPATE IN THE STATE FOREST STEWARDSHIP PROGRAM, TMK (4) 3-9-002:001, WAILUA DISTRICT, ISLAND OF KAUAI.

BACKGROUND:

The State of Hawaii Forest Stewardship Program (FSP) provides technical and financial assistance to private landowners and land managers committed to the stewardship, conservation and restoration of important forest resources across the state. These private properties provide a variety of public benefits for the residents of Hawaii, including but not limited to: groundwater production, decreased soil erosion, wildlife habitat, timber production, recreational and educational opportunities, and local jobs. The assistance provided by the FSP enables private landowners to develop and implement long-term multi-resource management plans to conserve, restore and maintain forested areas on their property.

The program was established through Chapter 195 F-6, Hawaii Revised Statutes (HRS). Annual funding is provided by the Conveyance Tax Chapter 247-7, HRS, whereby twenty-five percent of the amount collected from this tax is paid into the Natural Area Reserve Fund. The Department of Land and Natural Resources (DLNR) currently has the authority to use \$500,000 per year to fund approved Forest Stewardship projects in order to provide financial assistance for private landowners to manage, protect, and restore important natural forest resources on forested and formerly forested properties. The FSP is implemented pursuant to Chapter 195-F, HRS, and Hawaii Administrative Rules (HAR) Chapter 109. The program provides cost-share reimbursement for the development of long term forest management plans and for the implementation of approved Forest Stewardship management plans.

To participate in FSP, interested landowners and managers follow a sequence of application steps to develop of a long-term Forest Stewardship management plans that are submitted to and reviewed by the Forest Stewardship Advisory Committee (FSAC). Landowners interested in FSP submit an

application to the FSAC which recommends the development of a Forest Stewardship management plan based on eligibility requirement and to ensure the proposed project is in line with the programs' goals of conservation, restoration and/or forest production. Landowners then create a forest management plan that is reviewed by Division staff and the FSAC. The committee then recommends the management plan for approval by the Division and Department.

The award of cost-share support for Forest Stewardship Management Plan implementation follows a similar process to the development of a management plan. Upon approval of a project's Forest Stewardship management plan, the FSAC reviews the implementation schedule and budget summary to ensure that the practice costs are reasonable and follow the program's previously approved cost-share rates. The FSAC recommends cost-share support for project implementation based on the 10-year implementation schedule in the approved Forest Stewardship management plan. After review by the Division, the request is then submitted to the Board of Land and Natural Resources (BLNR) for consideration. Review and approval of the Forest Stewardship project and management plan as well as authorization of cost-share support for the project by the BLNR is required in order for the Department of Land and Natural Resources to enter into the Forest Stewardship Agreement with the landowner. The Division has previously worked with the Department of the Attorney General on development of a Forest Stewardship Agreement template (Exhibit A). Following authorization by the BLNR the landowner is required to enter into a Forest Stewardship Agreement that commits them to implementing their approved management plan over the next 10 years and authorizes state cost-share reimbursement for their project.

The Saiva Siddhanta Forest Stewardship Management Plan proposes to convert 80 acres from non-native grassland to lowland native forest and hardwood plantations. The larger property, tax map key number (4) 3-9-002:001, Unit G, 312 acres, is approved for a 35 year land license as of May 8, 2013 between the Saiva Siddhanta Church and the Agricultural Development Corporation (Exhibit B). The property is designated by the State and County as Agriculture in the Wailua District of Kauai County. Previous land use primarily includes sugar cane production, after which time the land was fallow until the Saiva Siddhanta Church began working in the area in 2001 under a year to year lease. The Church has installed native and non-native timber plantings, noni fields and begun nursery production on site. The Saiva Siddhanta project's goals are to provide a viable timber endowment of koa and mahogany for the monastery and temple; to provide timber resources of the local community, to help develop a viable variety of low elevation koa from Kauai seed that is disease and pest resistant; and to contribute to the knowledge on growing economically viable native sandalwood. The FSAC approved the Saiva Siddhanta Forest Stewardship Management Plan at their meeting on May 10, 2013 and the State Forester/Division Administrator approved the management plan on September 27, 2013 (Exhibit C).

DISCUSSION:

The Division is requesting approval of a Forest Stewardship Agreement for the implementation of the Saiva Siddhanta Church Forest Stewardship Management Plan and project pending finalization and execution of a 35 year land license between the Saiva Siddhanta Church and the Agricultural Development Corporation. Over the course of the 10 year management plan the Saiva Siddhanta

Church intends to establish native and non-native, non-invasive hardwood plantation. In addition the Church has proposed to install a koa (*Acacia koa*) seed plantation in cooperation with the Hawaii Agriculture Research Center (HARC) that will provide a local seed source for disease resistant koa on Kauai, and to restore a portion of the property adjacent to existing waterways to native forest through the Hawaii Conservation Reserve Enhancement Program (CREP). The project management prescriptions and practices will include establishment of windbreaks to protect the value tree plantations; control invasive weed species; preparation of the site prior to outplanting; fencing of areas susceptible to ungulate damage; and tree establishment.

Timber Stand Establishment: The primary objective of the project is to establish high value hardwood plantations that will provide a local resource for timber materials, which will ultimately provide a timber endowment for the Saiva Siddhanta Church. The Saiva Siddhanta Forest Stewardship project intends to establish the hardwood plantation by initially establishing 6,000 ft. of windbreaks to protect the future out-plantings and begin to change the microclimate on site so that it is more suitable for plantation forestry. Additional management practices include site preparation and the establishment of approximately 36 acres of primarily Honduras mahogany and koa plantations. Honduras mahogany has a worldwide market and is typically used for furniture, cabinets, boats, and musical instruments. Mahogany harvests are expected to begin 20 to 35 years following tree establishment depending on stand performance and market demand. Honduras mahogany has been screened by the Hawaii Pacific Weed Risk Assessment and has a low risk score for being invasive. Additionally, the project will evaluate the relative success of the low elevation koa varieties over the next three to five years and based on growth, survivability, and form koa may be substituted for the mahogany in a portion of the plantation area.

Public benefits from establishment of the hardwood plantations include increased groundwater infiltration, decreased soil erosion, timber production and local job opportunities.

Payback of State Funds: In accordance with Hawaii Administrative Rule Chapter 109 Sections 13-109-11 Payback Provision, the BLNR may require a payback provision for projects that have a forest production component to their projects. The BLNR may require that a certain percentage of all matching State funds provided under the Forest Stewardship Agreement be paid back to the program upon each commercial harvest or sale as set forth by the contract between the BLNR and applicant. A commercial timber harvest is defined as a certain minimum volume of timber removed per acre from a minimum acreage of the applicant's project as determined by the Division or as set forth in the contract between the BLNR and the applicant.

The amount of cost-share requested for the timber component of the Saiva Siddhanta Forest Stewardship project is \$127,861.58. The Division is recommending that the Board set a 5% payback rate on commercial harvests occurring from Saiva Siddhanta Forest Stewardship project until \$63,930.79 (50% of the State cost share provided to the project for the timber component) is repaid. The recommendation is consistent with previous FSP projects that contain a timber production component implemented under the program. The Division is requesting that the Board define a commercial timber harvest for the Saiva Siddhanta Forest Stewardship project as any volume of timber sold within one month period that generates revenue greater than or equal to \$1000 gross.

Native Forest Restoration and Koa Seed Plantation: In addition to the activities funded through the FSP the Saiva Siddhanta Church plans to enroll approximately 48 acres of the project area described in the Saiva Siddhanta Forest Stewardship Management plan in Hawaii CREP, landowner assistance program run jointly between DLNR, USDA Farm Service Agency and USDA Natural Resources Conservation Service that focuses on restoration of sensitive agriculture lands to native forests. The intended CREP project area is included in the Saiva Siddhanta Forest Stewardship management plan but is not requesting funding support at this time from FSP. The Saiva Siddhanta Church will utilize Hawaii CREP to help establish an overstory of the koa mixed with a variety of other native species, including Hawaiian sandalwood, adjacent to the Aahoaka ditch and Hanamaula stream. The koa out-planted under this portion of the project area will be screened by HARC for resistance to koa wilt disease. The planting of wilt-resistant koa will establish a low elevation seed source for koa on Kauai that will be accessible to the community to further encourage establishment of koa on fallow agricultural lands for use in commercial forestry or restoration efforts.

The commitment of the private landowner to restore and manage the Hawaii CREP project for native species and habitat is significant and will work in concert with the Forest Stewardship project to provide a number of public benefits including increasing groundwater infiltration, decreased soil erosion, forest health improvements, wildlife habitat and local job opportunities.

A total of \$127,861.58 in State Forest Stewardship funding is requested to provide cost-share support for the Saiva Siddhanta Forest Stewardship project. The Saiva Siddhanta Church will be contributing an additional \$127,861.58 toward the completion of the project over the 10 year period of the management plan. The costs associated with the proposed practices are consistent with the intensity of management required for this type of project. Cost-share funds are provided as reimbursement payments for implementation of approved management practices through the State fiscal year 2024. In addition the Saiva Siddhanta Church has agreed to continue maintenance of the installed Forest Stewardship practices for an additional 20 years following the completion of the 10 year cost-sharing portion of the Agreement, through State fiscal year 2044, as required by the program for timber production projects.

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

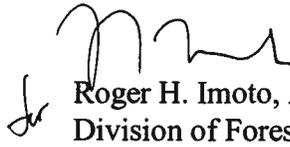
Per the requirements of Chapter 343, HRS, and as required for the Forest Stewardship project that have a timber harvesting component, Saiva Siddhanta Church has submitted a request and been approved by the Agriculture Development Corporation (ADC) for a Declaration of Exemption for the Saiva Siddhanta Forest Stewardship project (Exhibit D). In accordance with HAR Sections 11-200-8, ADC, the landowner owner/manager for the Saiva Siddhanta Forest Stewardship project area, declares the subject request is exempt from the preparation of an environmental assessment pursuant to Exemption Class No. 1, that states "operations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing." Should the Saiva Siddhanta Church propose any future use of the land that triggers Hawaii Revised Statutes (HRS) Chapter 343 review, Saiva Siddhanta Church shall be responsible for compliance with HRS Chapter 343, as amended.

RECOMMENDATIONS:

That the Board:

1. Approve the Saiva Siddhanta Forest Stewardship project and Forest Stewardship management plan;
2. Approve cost-share support in the amount of \$127,861.58 for the implementation of the Saiva Siddhanta Forest Stewardship management plan;
3. Authorize the Chairperson to amend, finalize and execute a Forest Stewardship Agreement with Saiva Siddhanta Church to participate in the State Forest Stewardship Program subject to the following:
 - A. Availability of State Forest Stewardship funds;
 - B. Review and approval as to form of the Forest Stewardship Agreement by the Department of the Attorney General;
 - C. Finalization and execution of a 35 year land license agreement between the Saiva Siddhanta Church and the Agricultural Development Corporation.

Respectfully submitted,


Roger H. Imoto, Administrator
Division of Forestry and Wildlife

Attachment: (Exhibit A, B, C and D)

APPROVED FOR SUBMITTAL:



William J. Aila, Jr., Chairperson

**STATE OF HAWAII
FOREST STEWARDSHIP AGREEMENT**

This AGREEMENT, made this _____ day of _____
_____, 20___, by and between the BOARD OF LAND AND NATURAL
RESOURCES, STATE OF HAWAII (“STATE”), by its Chairperson, whose address is
1151 Punchbowl Street, Honolulu, Hawaii 96813, and _____, (“LANDOWNER”)
whose address and federal and state taxpayer identification numbers are as follows:_____

Business address

*Federal and state taxpayer identification
numbers*

RECITALS

WHEREAS, Chapter 195F, Hawaii Revised Statutes (HRS), provides for the establishment of a forest stewardship program to encourage and assist private landowners in managing, protecting, and restoring important watersheds, native vegetation, fish and wildlife habitats, isolated populations of rare and endangered plants, and other forest lands that are not recognized as potential natural area reserves; and

WHEREAS, in accordance with HRS Chapter 195F and Title 13, Subtitle 5, Part 1, Chapter 109 of the Hawaii Administrative Rules (HAR), the LANDOWNER has applied, and qualifies, for participation in the forest stewardship program; and

WHEREAS, the LANDOWNER has submitted a forest stewardship management plan, as set forth in Exhibit A hereto, that the STATE agrees is consistent with the policies, goals, and objectives of the forest stewardship program; and

WHEREAS, the STATE desires to assist the LANDOWNER in implementing the forest stewardship management plan with financial and other assistance; and

WHEREAS, money is available to fund this agreement pursuant to: Act 195, SLH 1993, Hawaii Revised Statutes, Section 247-7.

NOW, THEREFORE, in consideration of the promises contained in this AGREEMENT, the STATE and the LANDOWNER agree as follows:

A. SCOPE OF SERVICES

The LANDOWNER hereby agrees to implement the forest stewardship management plan set forth in Exhibit A and the project described in the “Scope of Services” set forth in Attachment S1 in proper and satisfactory manner as determined by the STATE, both of which are hereby made a part of this AGREEMENT. The STATE hereby agrees to assist the LANDOWNER in implementing the forest stewardship management plan, all in accordance with the terms and conditions set forth in Attachments S1, S2, S3, S4, S5, and S6, attached hereto.

B. COMPENSATION

The LANDOWNER shall be compensated for performance of the project under this AGREEMENT according to the “Compensation and Payment Schedule,” set forth in Attachment S2, which is hereby made a part of this Agreement.

C. TIME OF PERFORMANCE

The performance required of the LANDOWNER under this AGREEMENT shall be completed in accordance with the “Time of Performance” set forth in Attachment S3, which is hereby made a part of this AGREEMENT.

D. CERTIFICATE OF EXEMPTION FROM CIVIL SERVICE

The “State of Hawaii Certificate of Exemption from Civil Service,” set forth in Attachment S4, is hereby made a part of the AGREEMENT.

E. OTHER TERMS AND CONDITIONS

The “State of Hawaii Special and General Conditions for Forest Stewardship Program Agreements,” set forth in Attachment S5, and the General Conditions attached hereto, are hereby made a part of this AGREEMENT. For the purposes of this AGREEMENT the term “CONTRACTOR” in the “General Conditions” shall mean the LANDOWNER.

F. STANDARDS OF CONDUCT DECLARATION

The "Standards of Conduct Declaration" by LANDOWNER, set forth in Attachment S6, is hereby made a part of this AGREEMENT. For the purposes of this AGREEMENT the term "CONTRACTOR" in the "Standards of Conduct Declaration" shall mean the LANDOWNER.

Exhibit A

IN WITNESS WHEREOF, the parties execute this AGREEMENT by their signatures to be effective as of the date first above written.

STATE

By _____
Chairperson of the Board of Land and Natural
Resources

Print Name

Date _____

LANDOWNER

By _____

Print Name

Date _____

Approved by the Board of
Land and Natural Resources on

APPROVED AS TO FORM:

Deputy Attorney General

LANDOWNER'S ACKNOWLEDGMENT

STATE OF HAWAII)
) SS.
COUNTY OF _____)

On this _____ day of _____, 20____, before me personally appeared _____, to me personally known, who being by me duly sworn, did say the he/she is the _____, the LANDOWNER named in the foregoing instrument, and the he/she is authorized to sign said instrument on behalf of the LANDOWNER, and acknowledges that he/she executed said instrument as the free act and deed of the LANDOWNER.

Notary Public, State of Hawaii

My Commission Expires: _____

Date of the Notarized Document: _____
Number of Pages: _____
Identification or Description of the Document being Notarized: _____

Printed Name of Notary: _____ Circuit

Notary's Signature and Notary's Official Stamp or Seal Date



STATE OF HAWAII
CONTRACTOR'S
STANDARDS OF CONDUCT DECLARATION

For the purposes of this declaration:

"Agency" means and includes the State, the legislature and its committees, all executive departments, boards, commissions, committees, bureaus, offices; and all independent commissions and other establishments of the state government but excluding the courts.

"Controlling interest" means an interest in a business or other undertaking which is sufficient in fact to control, whether the interest is greater or less than fifty per cent (50%).

"Employee" means any nominated, appointed, or elected officer or employee of the State, including members of boards, commissions, and committees, and employees under contract to the State or of the constitutional convention, but excluding legislators, delegates to the constitutional convention, justices, and judges. (Section 84-3, HRS).

On behalf of _____, CONTRACTOR, the undersigned does declare as follows:

1. CONTRACTOR is* is not a legislator or an employee or a business in which a legislator or an employee has a controlling interest. (Section 84-15(a), HRS).
2. CONTRACTOR has not been represented or assisted personally in the matter by an individual who has been an employee of the agency awarding this Contract within the preceding two years and who participated while so employed in the matter with which the Contract is directly concerned. (Section 84-15(b), HRS).
3. CONTRACTOR has not been assisted or represented by a legislator or employee for a fee or other compensation to obtain this Contract and will not be assisted or represented by a legislator or employee for a fee or other compensation in the performance of this Contract, if the legislator or employee had been involved in the development or award of the Contract. (Section 84-14 (d), HRS).
4. CONTRACTOR has not been represented on matters related to this Contract, for a fee or other consideration by an individual who, within the past twelve (12) months, has been an agency employee, or in the case of the Legislature, a legislator, and participated while an employee or legislator on matters related to this Contract. (Sections 84-18(b) and (c), HRS).

CONTRACTOR understands that the Contract to which this document is attached is voidable on behalf of the STATE if this Contract was entered into in violation of any provision of chapter 84, Hawaii Revised Statutes, commonly referred to as the Code of Ethics, including the provisions which are the source of the declarations above. Additionally, any fee, compensation, gift, or profit received by any person as a result of a violation of the Code of Ethics may be recovered by the STATE.

* Reminder to Agency: If the "is" block is checked and if the Contract involves goods or services of a value in excess of \$10,000, the Contract must be awarded by competitive sealed bidding under section 103D-302, HRS, or a competitive sealed proposal under section 103D-303, HRS. Otherwise, the Agency may not award the Contract unless it posts a notice of its intent to award it and files a copy of the notice with the State Ethics Commission. (Section 84-15(a), HRS).

CONTRACTOR

By _____
(Signature)

Print Name _____

Print Title _____

Name of Contractor _____

Date _____



STATE OF HAWAII
SCOPE OF SERVICES

SECTION 1 - SCOPE OF WORK

- 1.1 MANAGEMENT AREA - The project area to be managed is the _____ Forest Stewardship project area; TMK NUMBER(S) _____ as designated on maps found in _____ to this AGREEMENT.
- 1.2 THE PRIMARY OBJECTIVES - The STATE and LANDOWNER shall direct their efforts under this AGREEMENT to do the following: fund the management of and manage the natural resources of the _____ Forest Stewardship project area (“Forest Stewardship project area”) in accordance with the MANAGEMENT PLAN, attached as _____ to this AGREEMENT, and all approved amendments thereto, with the intention of _____ in the _____ community.
- 1.3 SCOPE OF WORK - The LANDOWNER shall perform the following technical and professional services:
- (a) Management plan. The LANDOWNER shall carry out the management activities outlined in the approved MANAGEMENT PLAN, attached as _____ to this AGREEMENT.
 - (b) Consultation. The LANDOWNER shall be available for consultation regarding progress, upon request by the STATE.
- 1.4 AUTHORITY TO CARRY OUT MANAGEMENT PLAN - The LANDOWNER hereby represents that it has authority to carry out the MANAGEMENT PLAN and that it is the landowner of “Forest Stewardship project area” as defined in Section 195F-2, Hawaii Revised Statutes, as amended.
- 1.5 NO INCONSISTENT ACTIVITIES - The LANDOWNER shall not take any action on the “Forest Stewardship project area”, which will undermine or conflict with the approved MANAGEMENT PLAN.

II. SECTION 2 - CONTROL AND PROGRESS OF THE WORK



STATE OF HAWAII

SCOPE OF SERVICES

2.1 REPORTS - The LANDOWNER shall submit to the STATE, reports showing work accomplished at the following times:

- (a) Progress Reports. A progress report shall be due on December 31 of each year under this AGREEMENT for which funding has been approved. This report shall include a description of the approved MANAGEMENT PLAN accomplishments and activities, areas needing technical advice, an accounting of expenditures with documentation, and proposed modifications to the current year's management activities. This report shall be submitted to the STATE within 30 days following the due date. If the LANDOWNER would like more than 2 reimbursements per year, a progress report shall accompany each reimbursement request and the "Forest Stewardship project area" shall be made available for a site visit by Department of Land and Natural Resources personnel.
- (b) Annual Report. An annual report shall be due on or before June 30 of each year under this AGREEMENT for which funding has been approved. In the event the contract is executed less than 6 months prior to June 30, then no annual report is due on June 30 of that year. This report shall include a description of MANAGEMENT PLAN accomplishments and activities, areas needing technical advice, and proposed modifications to the next year's approved management objectives, projects and budget. This report shall also include a detailed accounting of expenditures for the preceding 12-month period to provide the basis for the annual reconciliation of the STATE's and the LANDOWNER's respective shares of funding as determined pursuant to Attachment S2, Section 1.1. This report shall be submitted to the STATE within 60 days of due date. This report may also request, subject to approval by the STATE, changes to the management plan, for either or both the practice implementation schedule and/or the budget/payment schedule in order to best consolidate and rectify the past year's outcomes or lack thereof.



STATE OF HAWAII
SCOPE OF SERVICES

- 2.2 DELEGATION OF AUTHORITY - As used herein and throughout this AGREEMENT, unless the context clearly indicates otherwise, the STATE shall include the State of Hawaii Department of Land and Natural Resources and its authorized employees, agents and representatives.



STATE OF HAWAII
COMPENSATION AND PAYMENT SCHEDULE

SECTION 1 – PAYMENT

1.1 SCOPE OF PAYMENT -

- (a) STATE's Payment. In full satisfaction of the STATE's funding share of the approved MANAGEMENT PLAN, which is contingent upon satisfactory completion by the LANDOWNER of the management activities described in the approved MANAGEMENT PLAN, attached as Exhibit A to this AGREEMENT, the STATE agrees to pay the LANDOWNER a total sum not to exceed ____
____ 00/100 Dollars (\$ _____) according to the schedule outlined below that includes fiscal year 20XX through 20XX for completion of the management activities described in the approved MANAGEMENT PLAN. Payments shall be made by the STATE to the LANDOWNER as partial annual reimbursements for actual expenditures made by the LANDOWNER in completing the management activities described in the approved MANAGEMENT PLAN only after the corresponding progress or annual report has been reviewed by the STATE and all reported management activity accomplishments have been verified following an inspection of the “Forest Stewardship project area” by the STATE. Actual expenditures may include but are not limited to in-kind services such as heavy equipment operation and sources of labor. All funds to be paid by the STATE to the LANDOWNER shall be encumbered on an annual basis for the forthcoming fiscal year provided that the STATE has approved the continuation of management activities outlined in _____ of this AGREEMENT for the forthcoming fiscal year.

If in any fiscal year the allocated annual funds are not exhausted due to the LANDOWNER not completing all management activities described in the MANAGEMENT PLAN for that year, the LANDOWNER may request that these funds be incorporated in the following year's encumbrances to complete the management activities which were not completed. If there are sufficient funds available to accommodate LANDOWNER's request and the STATE approves the



STATE OF HAWAII

COMPENSATION AND PAYMENT SCHEDULE

request, this change will be incorporated by written amendment to the AGREEMENT.

If in any fiscal year the STATE does not appropriate, and/or the STATE does not approve the expenditure of, funds sufficient to meet the STATE's funding share of the approved MANAGEMENT PLAN, this AGREEMENT shall automatically terminate without penalty at the end of the last fiscal year for which any funds have been appropriated and approved, subject to Attachment S5, Section 4.1, regarding partial State funding.

- (b) LANDOWNER's Share. In full satisfaction of the LANDOWNER's funding share of the approved MANAGEMENT PLAN, the LANDOWNER agrees to fully complete the management activities described in the approved MANAGEMENT PLAN, and to initially assume all corresponding actual annual expenditures in expectation of the STATE's partial reimbursement for satisfactory completion of these management activities. Expenditures for implementation of the approved MANAGEMENT PLAN which are less than the amounts allocated in the approved budget may be made by the LANDOWNER in its discretion so long as the quality of materials and work as called for in the approved MANAGEMENT PLAN are not adversely affected.



STATE OF HAWAII
COMPENSATION AND PAYMENT SCHEDULE

**PATRICK & SHEILA CONANT FOREST STEWARDSHIP
PROJECT BUDGET/PAYMENT SCHEDULE:**

YEAR	Total Budget	Land Owner share	State Share
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Total			

1.2 PAYMENT SCHEDULE –

- (a) Progress Payment. Within 30 days following receipt of the progress report as provided in Attachment S1, Section 2.1(a) for each year for which the STATE has agreed to pay the LANDOWNER as outlined in the schedule above and for which funding has been appropriated, the STATE shall pay to the LANDOWNER a portion of the STATE's funding share of the approved MANAGEMENT PLAN as a partial reimbursement of actual expenditures made to complete approved management activities. This payment shall be subject to the LANDOWNER's satisfactory completion of the corresponding approved management activities described in the approved MANAGEMENT PLAN, attached as Exhibit A to this AGREEMENT, and calculated on the basis of actual expenditures made by the LANDOWNER. This payment shall also be subject to the STATE's approval of such progress report.
- (b) Annual/Final Payment. Within 30 days of receipt of the annual report as provided in Attachment S1, Section 2.1(b), the STATE shall pay to the LANDOWNER the balance of the STATE's approved annual funding share. This payment shall be subject to the LANDOWNER's satisfactory completion of the corresponding



STATE OF HAWAII

COMPENSATION AND PAYMENT SCHEDULE

annual management activities described in the approved MANAGEMENT PLAN, attached as Exhibit A to this AGREEMENT, and calculated on the basis of actual expenditures made by the LANDOWNER.

- (1) Annual or Final Acceptance and Payment - Annual or final acceptance means a written notice from the STATE to the LANDOWNER advising the LANDOWNER of the satisfactory fulfillment of the AGREEMENT's annual or final requirements.

- 1.3 UNAUTHORIZED WORK - The LANDOWNER shall not receive matching STATE funds for management activities not designated in the approved MANAGEMENT PLAN. All work completed by the LANDOWNER prior to receipt of a fully-executed copy of this AGREEMENT, and prior to STATE approval of funding for any subsequent years and prior to STATE approval of any subsequent amendments to the approved MANAGEMENT PLAN, shall be at the LANDOWNER's own volition and risk, including work performed during the period of any deliberations by the STATE in anticipation of approval; provided, however, that if funding and/or amendments applicable to such work are subsequently approved, the LANDOWNER may be paid for such work even if performed prior to such approval.

SECTION 2 - FISCAL RECORDS MAINTENANCE, RETENTION, AND ACCESS

- 2.1 The LANDOWNER shall maintain, in accordance with generally acceptable accounting practices, fiscal records and supporting documents and related files, papers and reports that adequately reflect all direct and indirect expenditures and management and fiscal practices materially related to the LANDOWNER's performance of services paid for by State funds under this AGREEMENT.
 - (a) The STATE, the Comptroller of the State of Hawaii, and any of their authorized representatives, the committees (and their staff) of the Legislature of the State of Hawaii, and the Legislative Auditor of the State of Hawaii shall have the right of access to any book, document, paper, file, or other records of the LANDOWNER



STATE OF HAWAII

COMPENSATION AND PAYMENT SCHEDULE

that is materially related to the performance by the LANDOWNER of services funded by the STATE under this AGREEMENT, in accordance with generally accepted audit procedures, for the purposes of monitoring and evaluating the LANDOWNER's performance of services and the LANDOWNER's management program and fiscal practices to assure the proper and effective expenditure of funds under this AGREEMENT; provided, however, that no party conducting any such audit or examination shall copy, distribute, or retain any of such information or records, with the understanding that it is not the intention that the LANDOWNER's financial and other records and information be made public.

- (b) The right of access shall not be limited to the required retention period but shall last as long as the records are retained. The LANDOWNER shall retain all records related to the LANDOWNER's performance of services funded under this AGREEMENT for at least 3 years after the date of submission of the LANDOWNER's annual reports for any designated period and payment for such expenditures by the STATE in accordance with its matching share, except that if any litigation, claim, negotiation, investigation, audit, or other action involving the records has been started before the expiration of the 3-year period, the LANDOWNER shall retain the records until completion of the action and resolution of all issues that arise from it or until the end of the regular 3-year retention period, whichever occurs later.



STATE OF HAWAII
TIME OF PERFORMANCE

SECTION 1 - EXECUTION OF AGREEMENT

- 1.1 EXECUTION OF AGREEMENT - This AGREEMENT shall be promptly executed by the STATE and the LANDOWNER upon approval by each party.
- 1.2 CERTIFICATION AND APPROVAL OF AGREEMENT - This AGREEMENT shall not be considered binding upon the STATE, unless the availability of the funds therefore has been duly certified as prescribed by Section 103-39, Hawaii Revised Statutes, as amended. Further, this AGREEMENT shall not be considered to be fully executed unless the Office of the Attorney General of the State of Hawaii has approved this AGREEMENT as to form.

SECTION 2 - TERM

- 2.1 INITIAL TERM - The initial term will be for a minimum of Thirteen (13) years following the completion of any and all management practices for which the LANDOWNER has received cost-share assistance. Accordingly, this AGREEMENT shall commence on the date of full execution hereof and shall be in effect until _____; subject, however to earlier termination as provided in this AGREEMENT.
- 2.2 STATE FUNDING CONDITION - This AGREEMENT is subject to continued funding of the STATE's share of the approved management budget as outlined in Attachment S2, Section 1.1. Annual funding is provided by the Conveyance Tax pursuant to Act 195, SLH 1993, Section 247-7, Hawaii Revised Statutes, whereby twenty-five percent of the amount collected from this tax shall be paid into the natural area reserve fund from which funds are dispersed to the natural area partnership and forest stewardship programs, and by way of Act 269, SLH 2000 to projects undertaken in accordance with watershed management plans. Payments are then made through the forest stewardship program to reimburse landowners for implementing approved stewardship management practices. Any balance remaining in this fund at the end of any fiscal year shall be carried forward



STATE OF HAWAII
TIME OF PERFORMANCE

into the fund for the next fiscal year. If in any fiscal year the STATE does not appropriate, and/or the STATE does not approve the expenditure of, funds sufficient to meet its share of the approved management budget, this AGREEMENT shall automatically terminate without penalty at the end of the last fiscal year for which any funds have been appropriated and approved, subject to Attachment S5, Section 4.1, regarding partial State funding.



STATE OF HAWAII

**CERTIFICATE OF EXEMPTION
FROM CIVIL SERVICE**

1. By Heads of Departments Delegated by the Director of the Department of Human Resources Development (“DHRD”).*

Pursuant to a delegation of the authority by the Director of DHRD, I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, Hawaii Revised Statutes (HRS).

(Signature)

(Date)

(Print Name)

(Print Title)

* This part of the form may be used by all department heads and the heads of attached agencies to whom the Director of DHRD expressly has delegated authority to certify § 76-16, HRS, civil service exemptions. The specific paragraph(s) of § 76-16, HRS, upon which an exemption is based should be noted in the contract file. If an exemption is based on § 76-16(b)(15), the contract must meet the following conditions:

- (1) It involves the delivery of completed work or product by or during a specific time;
- (2) There is no employee-employer relationship; and
- (3) The authorized funding for the service is from other than the "A" or personal services cost element.

NOTE: Not all attached agencies have received a delegation under § 76-16(b)(15). If in doubt, attached agencies should check with the Director of DHRD prior to certifying an exemption under § 76-16(b)(15). Authority to certify exemptions under §§ 76-16(b)(2), and 76-16(b)(12), HRS, has not been delegated; only the Director of DHRD may certify §§ 76-16(b)(2), and 76-16(b)(12) exemptions.

2. By the Director of DHRD, State of Hawaii.

I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to §76-16, HRS.

(Signature)

(Date)

(Print Name)

(Print Title, if designee of the Director of DHRD)



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SECTION 1 – INSPECTIONS

1.1 The STATE shall have the right to make inspections of the “Forest Stewardship project area” after prior notice to the LANDOWNER. In addition, the STATE shall be obligated to inspect the work on the “Forest Stewardship project area” not less frequently than once per year under this AGREEMENT, and more frequently in the case of a LANDOWNER default as provided in Section 4.1(d) below or when the LANDOWNER makes more than 2 reimbursement requests per year as provided in Attachment S1, Section 2.1. The STATE shall notify the LANDOWNER within a reasonable time thereafter of any perceived defaults in the LANDOWNER's implementation of the approved MANAGEMENT PLAN. The LANDOWNER hereby represents that it has authority to allow access to the “Forest Stewardship project area” by the STATE in connection with this AGREEMENT, conditional upon receipt of a liability waiver, acceptable to the LANDOWNER for all state personnel visiting the “Forest Stewardship project area”.

SECTION 2 - AMENDMENTS

2.1 The LANDOWNER may propose for approval by the STATE, and the STATE may approve, minor alterations to the approved MANAGEMENT PLAN, which will not have a material adverse impact on the achievement of the overall management objectives of the approved MANAGEMENT PLAN. This includes minor changes to the practice implementation schedule and/or changes in the budget/payments schedule so long as the total management activities do not subtract from or exceed the total scope of the approved MANAGEMENT PLAN and the budget/payments schedule does not exceed the total annual budget allocations up to and including the budget request for that year, and so long as the STATE has sufficient funding available to accommodate such a request.

2.1 The LANDOWNER may propose for approval by the STATE, and the STATE may approve, significant changes to the approved MANAGEMENT PLAN or budget to adapt to current conditions. Significant amendments to the approved MANAGEMENT PLAN shall include an amended budget, which will increase the overall STATE's funding share



STATE OF HAWAII
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above the total amount set forth in the approved budget/payment schedule. The STATE shall make the proposed amendments available for public review prior to final approval.

- 2.3 The proposed amendments may include, without limitation, re-establishment of management priorities, increase or reduction of the specified work, increases to the budget/payments schedule, or time for performance of specified tasks, all as determined considering the natural conditions of the “Forest Stewardship project area,” existing management priorities, threats, potential for decline of the natural resource during any period under consideration, availability of specialized labor or technical expertise, permitting requirements and time needed to obtain permits, and other material factors.
- 2.4 Any proposed expenditures which will increase the overall STATE's funding share above the amount set forth in the approved budget of the approved MANAGEMENT PLAN, which are proposed either as a result of additional costs required to implement the approved MANAGEMENT PLAN or as a result of amendments to the approved MANAGEMENT PLAN, must be mutually agreed upon in advance by and between the STATE and the LANDOWNER. If so agreed upon the approval of these expenditures shall be incorporated in written amendment to this AGREEMENT.
- 2.5 Economic Hardship. Notwithstanding other provisions of this AGREEMENT, in the event that the LANDOWNER determines in good faith that it is financially unable without undue economic hardship to fulfill its funding share as provided in Attachment S2, Section 1.1(b), or to carry out fully the management activities described in the approved MANAGEMENT PLAN, attached as Exhibit A to this AGREEMENT, within the budget and time period established thereby, the LANDOWNER may apply to the STATE to renegotiate the terms thereof.
- (a) Negotiation of Amendment. In such event, the STATE and the LANDOWNER shall meet and negotiate in good faith an acceptable amendment to the approved MANAGEMENT PLAN that seeks to accomplish the significant objectives of the approved MANAGEMENT PLAN reasonably within the LANDOWNER's



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financial means. The amendment may include, without limitation, re-establishment of management priorities and reduction and/or deferral of the specified work, involving significant costs, and/or extension of time for performance of specified tasks, all as determined considering the natural conditions of the “Forest Stewardship project area,” existing management priorities, threats, potential for decline of the natural resource during any period under consideration, other potential sources of funding, and other material factors.

- (b) Disputes. If the STATE and the LANDOWNER are unable to agree reasonably and in good faith on a suitable amendment to the approved MANAGEMENT PLAN, the parties shall refer any such disputes to arbitration as provided in the General Conditions, Section 11.

- (c) No Termination for Economic Hardship. This provision shall not be construed to allow the LANDOWNER or the STATE to terminate this AGREEMENT for economic hardship; it is rather intended to provide a mechanism for reasonable revisions to the approved MANAGEMENT PLAN for economic hardship.

SECTION 3 - PAYBACK OF STATE FUNDS

- 3.1 In the event that the LANDOWNER sells, conveys, or otherwise transfers LANDOWNER’s right, title, or interest in the “Forest Stewardship project area,” or any portion thereof, during the initial term of this AGREEMENT as defined in Attachment S3, Section 2.1, the LANDOWNER shall within 90 days of the sale, conveyance or transfer of title or interest in the “Forest Stewardship project area,” pay back to the STATE a portion of the amount paid by the STATE to the LANDOWNER pursuant to this AGREEMENT. The amount to be paid back to the STATE shall be that fraction of the total matching funds received by the LANDOWNER under this AGREEMENT that is equal to the fraction of the “Forest Stewardship project area” that is sold, conveyed or otherwise transferred by the LANDOWNER.



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3.2 In the event that the LANDOWNER sells, conveys, or otherwise transfers LANDOWNER's right, title, or interest in the "Forest Stewardship project area," or any portion thereof, during the initial term of this AGREEMENT as defined in Attachment S3, Section 2.1, the LANDOWNER will not be required to reimburse the STATE as set forth in Attachment S5, Section 3.1 for the cost-share assistance received if the person(s) who acquire the property contractually agree to assume full responsibility for this AGREEMENT for the initial term of the AGREEMENT, including but not limited to management and financial responsibilities and penalties contained herein. See Agenda Item _____, as amend, approved at the Board of Land and Natural Resources meeting. Nothing in this provision shall relieve the LANDOWNER of its obligations under this AGREEMENT.

SECTION 4 - TERMINATION; DEFAULT; PENALTY PAYBACK

4.1 TERMINATION OF THE AGREEMENT - It is mutually agreed that this AGREEMENT may be terminated for any one of the following reasons on the following terms:

(a) No State Funding. This AGREEMENT shall be terminated if the STATE does not approve funding for the forthcoming fiscal year of the approved MANAGEMENT PLAN. In such event, this AGREEMENT shall automatically terminate without penalty at the end of the funding period then in effect.

(b) Partial State Funding. This AGREEMENT may be terminated by the LANDOWNER if the STATE approves only a portion of its share of funding for the forthcoming fiscal year as outlined in the budget provided in the approved MANAGEMENT PLAN.

(1) In such event, the LANDOWNER shall elect, by written notice to the STATE, either:

(A) to terminate this AGREEMENT without penalty at the end of the funding period then in effect; or



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- (B) to revise the approved MANAGEMENT PLAN and budget in the LANDOWNER's reasonable discretion to accomplish significant management goals which can reasonably be funded with the amount of STATE funding actually approved.
- (c) Transfer to Government Agency. This AGREEMENT may be terminated without penalty if the “Forest Stewardship project area” is transferred or sold to a government agency committed to forest stewardship and that possesses the technical and professional skills to manage the “Forest Stewardship project area” natural resources.
- (d) LANDOWNER Default. This AGREEMENT may be terminated by the STATE upon substantial evidence that progress being made by the LANDOWNER in carrying out the approved MANAGEMENT PLAN is inadequate, incorrect, or insufficient to substantially complete on a timely basis the work called for in the approved MANAGEMENT PLAN subject to the lack of performance notification provisions set forth below.
- (1) Penalties Apply. In the event of termination for default in accordance with these provisions, the penalty payback provisions set forth below shall apply.
- (2) Lack of Performance Notification. In such event, the STATE may terminate for default, provided the STATE adheres to the following procedures for notice and opportunity to cure prior to termination:
- (A) The STATE shall first notify the LANDOWNER in writing of any perceived inadequacy, incorrectness or insufficient progress. The STATE and the LANDOWNER shall meet within two weeks



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thereafter, and every three months thereafter until one year following the date of the notice, and discuss in good faith the perceived failure and the reasons therefore and any subsequent progress or lack thereof. If the reason for the failure is a good faith inability of the LANDOWNER to carry out the terms of the MANAGEMENT PLAN for reasons beyond the LANDOWNER's reasonable control, including without limitation economic hardship as described in Attachment S5, Section 2.5 above, the STATE and the LANDOWNER shall specifically consider the need to amend the approved MANAGEMENT PLAN, including extending the time to carry out the work called for in the approved MANAGEMENT PLAN and/or revising the budget established in the approved MANAGEMENT PLAN, subject to the provisions of Attachment S1, Section 1.5 and Attachment S5, Section 2 of this AGREEMENT regarding amendments to this AGREEMENT and the approved MANAGEMENT PLAN. Following the date of the notice, the STATE shall be obligated to inspect the "Forest Stewardship project area" once each quarter after notifying the LANDOWNER, to determine the updated status of the perceived default.

- (B) Following the expiration of the one year period following notice of default given by the STATE to the LANDOWNER and failure of the LANDOWNER to remedy the default, or to make significant progress to remedy the default if by its nature the default cannot reasonably be remedied within one year, the STATE may elect to notify the LANDOWNER of its intention to terminate this AGREEMENT for default. Such notice shall be in writing, shall state that the STATE will terminate the AGREEMENT for default on a date not less than 3 months thereafter if the LANDOWNER



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does not remedy the default, or to make significant progress to remedy the default if by its nature the default cannot reasonably be remedied within 3 months, and shall specify that penalties as provided under this AGREEMENT shall apply.

- (C) If the LANDOWNER fails to remedy the default within 3 months thereafter, or to make significant progress to remedy the default if by its nature the default cannot reasonably be remedied within 3 months, the STATE may terminate this AGREEMENT effective immediately for default by written notice thereof to the LANDOWNER.
 - (D) The STATE shall be deemed to have complied with these provisions if it attempts in good faith to meet with the LANDOWNER and to inspect the “Forest Stewardship project area” as provided above, whether or not the LANDOWNER cooperates in such procedures.
- (3) All disputes regarding default and termination under this AGREEMENT, which cannot be resolved by the parties, shall be referred to arbitration as provided in the General Conditions, Section 11.
 - (4) If the LANDOWNER has not fully performed its work under this AGREEMENT on expiration or termination of this AGREEMENT, the STATE may withhold the final payment to the LANDOWNER pending full completion of the LANDOWNER's work. This withheld payment shall be paid by the STATE to the LANDOWNER on final acceptance and tax clearance as provided in Attachment S2, Section 1.2 (b) and the General Conditions, Section 17.



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4.2 PENALTY PAYBACK -

(a) Payback and Penalties. In the event that the LANDOWNER defaults on this AGREEMENT as provided in Attachment S5, Section 4.1(d) above and the STATE has followed the Lack of Performance Notification procedures as outlined in Attachment S5, Section 4.1(d)(2) above, the LANDOWNER shall promptly pay to the STATE the following payback and penalty monies:

(1) Refund of State Funds - 3 Years. All funds paid from the initial date of this AGREEMENT by the STATE to the LANDOWNER in the previous 3 years (or such portion thereof as STATE shall have funded if this AGREEMENT shall have been in effect for less than 3 years) shall be returned to the STATE. In the event that this AGREEMENT shall have been in effect for more than 3 years, the LANDOWNER shall be liable to pay back State funds for the immediately preceding 3 years. In addition, the LANDOWNER shall pay to the STATE a penalty of two percent of the total of funds that are returned to the STATE.

(b) No Other Party Liable. Only the LANDOWNER receiving State funding under the FOREST STEWARDSHIP PROGRAM shall be liable to the STATE under this AGREEMENT for the payback and penalty.

(c) Disputes. The LANDOWNER shall have the right to submit any disputes to the arbitration procedure as outlined in the General Conditions, Section 11 if it feels that the imposition of payback, and/or additional penalties is unwarranted.

4.3 VIOLATIONS OF AGREEMENT - It is expressly understood and agreed that violations which are not caused by the LANDOWNER shall not constitute or give rise to a default by the LANDOWNER under this AGREEMENT and no penalty provisions shall apply to the LANDOWNER.



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4.4 EFFECT OF EMINENT DOMAIN -

- (a) Full Condemnation. If any action in eminent domain for the condemnation of the fee title of the entire “Forest Stewardship project area” described herein is filed, or if the “Forest Stewardship project area” is acquired in lieu of eminent domain for a public improvement by a public agency or person or whenever there is any such action or acquisition by the federal government or the state government or any person, instrumentality or agency acting under authority or power of the federal government or the state government, this AGREEMENT shall be deemed null and void without penalty as to the land actually being condemned or so acquired as of the date the action is filed, and upon the termination of such a proceeding, this AGREEMENT shall be null and void without penalty for all land actually taken or acquired.
- (b) Partial Condemnation. When such an action to condemn or acquire less than all the entire “Forest Stewardship project area” is filed, this AGREEMENT shall be deemed null and void without penalty as to the portion so condemned or acquired.
- (c) Adjustment of approved MANAGEMENT PLAN. The land actually taken by the means set forth above in this Section shall be removed from this AGREEMENT and the approved MANAGEMENT PLAN and budget adjusted accordingly on a reasonable basis by the STATE and the LANDOWNER.

SECTION 5 - INCORPORATION OF CHAPTER 195F, HAWAII REVISED STATUTES

- 5.1 Incorporation. The provisions of chapter 195F, Hawaii Revised Statutes, as amended, are incorporated by reference into this AGREEMENT. In the event that there is any conflict between the provisions of this AGREEMENT and the provisions of chapter 195F, Hawaii Revised Statutes, the latter shall be controlling.



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5.2 Renumbering. In the event that chapter 195F, or any of the sections under chapter 195F, Hawaii Revised Statutes, are renumbered, any references to the chapter or sections in this AGREEMENT shall be deemed renumbered accordingly.

EXHIBIT A

_____ Forest Stewardship Management Plan.



STATE OF HAWAII
AGRIBUSINESS DEVELOPMENT CORPORATION
235 S. Beretania Street, Room 205
Honolulu, HI 96813
Phone: (808) 586-0186 Fax: (808) 586-0189

May 8, 2013

Subject: Request for Approval of Land License to
Saiva Siddhanta Church for Tax Map Key (4)3-09-002:
portion 1 at Kalepa, Kauai

Applicant: Saiva Siddhanta Church

Authority: Section 163D-4(a)(5), Hawaii Revised Statutes

Land Area: Unit G, 217.32 net acres (map attached)

Tax Map Key: (4)3-09-002:portion 1 (312 gross acres)

Land Status: Encumbered by Governor's Executive Order 4328 and
4401, respectively to the Agribusiness Development
Corporation for agricultural purposes.

License Term: 35 years

Base Rental: \$8,059.60/year (for 217.32 acres of useable land)

Character of Use: Diversified Agriculture, commercial nursery, forestry,
biomass production and accessory uses

Road Maintenance Fee: Kalepa Koalition (amount to be determined)

BACKGROUND:

Saiva Siddhanta Church (Saiva) was established on Kauai in 1970 and has since engaged in various agricultural projects such as cultivating fruit and banana orchards and vegetable gardens, raising honey bees, goats and horses, running a small dairy and a maintaining a tree nursery. With this experience through the years, they are considered to be bona fide farmers.

Saiva has been renting this unit (Unit G) from the Agribusiness Development Corporation (ADC) for pasture since 2010, when the Department of Land and Natural Resources transferred to the ADC, control and management of the "Wailua

Agricultural and Related Purposes Site, situate makai of Lihue-Koloa Forest Reserve and between Hanamaulu and North Fork of Wailua River" (Kalepa), pursuant to Governor's Executive Order 4328. Saiva also has been leasing 2.96 acres of conservation land from DLNR, which became effective on March 15, 1986. Although the lease expired in 2011, Saiva became a hold-over tenant and more recently on April 12, 2013, the Board of Land and Natural Resources unanimously approved a 65-year lease for the parcel.

Currently, the annual rent is \$1,680/year or \$7.21/acre/year for 233 net acres.

DEVELOPMENT AND UTILIZATION PLAN:

Unit G consists of 312 acres, of which approximately 217 acres are useable and the rest of the acreage is in gulch. Below is a table that shows the plan for the useable acreage.

2011 Preliminary Plan of Utilization and Development for the next five years:		
<u>Use</u>	<u>Acreage</u>	<u>2013 Revision</u>
Hardwood trees:	122.31	177.30
Nursery	20.09	
Pasture	35.98	18.02
Noni	5.00	
Contract Biomass	33.94	
Diversified Ag		<u>22.00</u>
	<u>217.32</u>	<u>217.32</u>

IMPROVEMENTS TO THE LAND:

Saiva disc harrowed all the useable land to eliminate sugar cane.

Currently, 11 acres are planted in hardwood trees and the remaining "hardwood acreage" is planned to be planted in native koa and sandalwood in the next 5-7 years.

The pasture acreage is fully utilized for retired dairy cows.

The diversified ag acreage is currently about half cultivated in noni and palm trees with plans to plant more over the years.

During an inspection in May 2012, the permit area had about 5 miles of ironwood as windbreak, with coconut trees, teak and mahogany, noni and landscape plants planted in various areas. A poly tunnel shelter for storage of farm equipment was constructed and there was a 40-foot container for storage of tools and supplies.

LAND CONDITION ASSESSMENT:

The permit area was found to be in good to very good condition. Overall, the property is well managed.

CONCLUSIONS:

Per Medusky & Company Inc's Summary Appraisal Report Regarding Market Rent for Agricultural Land, Kalepa, Kauai, Hawaii, the appraised market rents are as follows: Ranching/Pasture land is \$25-\$40/acre/year; Truck Farming/Diversified Ag is \$100+/acre/year for 30+ acres; and Biomass (Hardwood) is \$35-\$70/acre/year.

ADC's base rental allocation as follows: Pasture: \$30/acre/year; Diversified agriculture: \$100/acre/year; and Hardwood Trees: \$30/acre/year

RECOMMENDATION:

Approval of Saiva Siddhanta Church application for a 35-year license in Kekaha, Kauai with the following conditions:

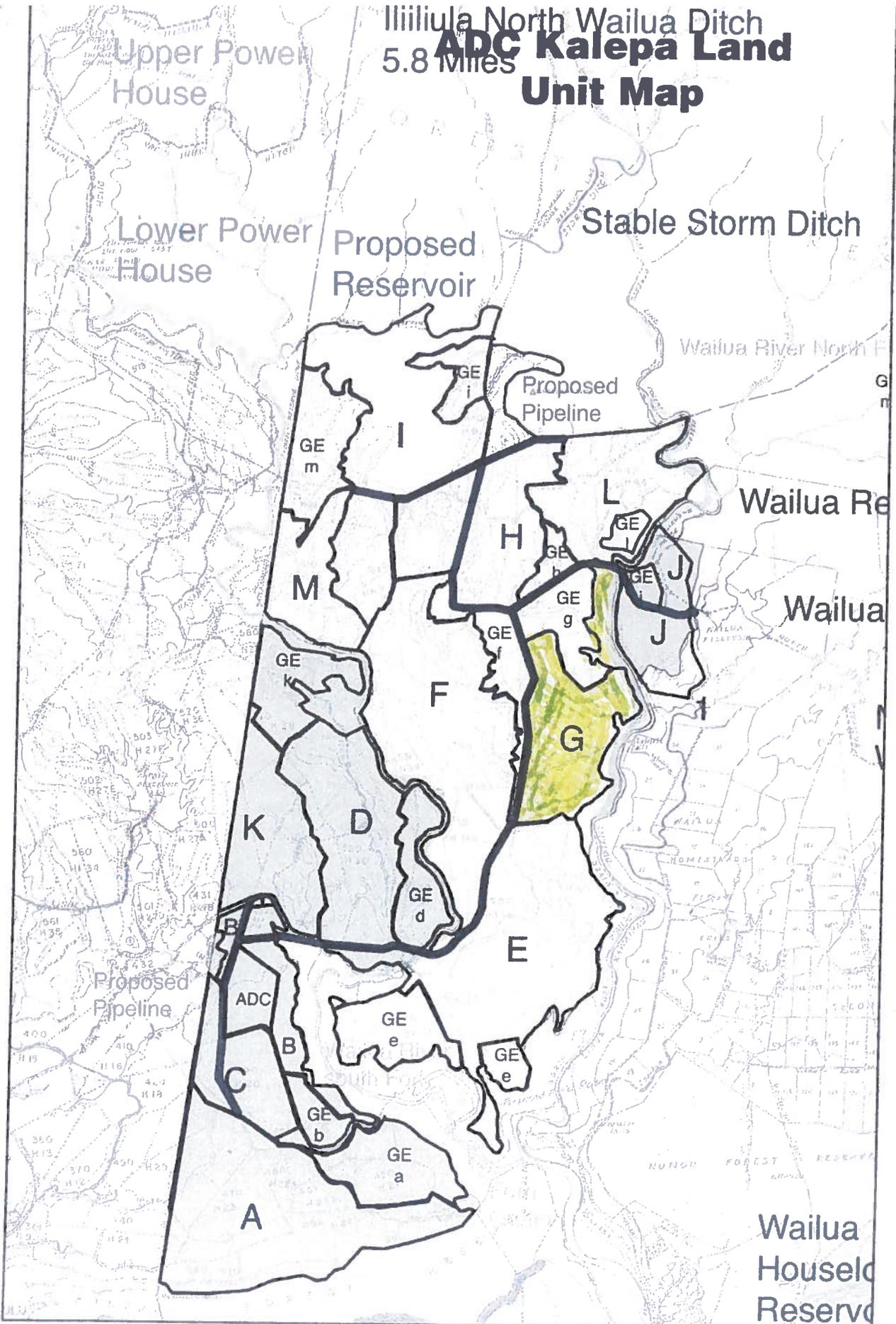
- 1) License fee of \$50/acre/year or \$8,059 per year for 217.32 useable acres.
- 2) Base Rent Increase: Every 5 years, an additional 2.5% shall be added to the base rent and shall be the base rent for each subsequent rent increase.
- 3) ADC's Kalepa ag land licensees may become a member of the Kalepa Koalition that is responsible for maintaining the road and security gates as described in a Memorandum of Understanding between the Kalepa Koalition and ADC dated January 10, 2013. Members and non-members will be required to pay a road maintenance fee at a rate to be determined.
- 4) The Licensee shall not sublicense the whole or any portion of their premises without the prior written approval of the ADC Board.

Respectfully submitted,

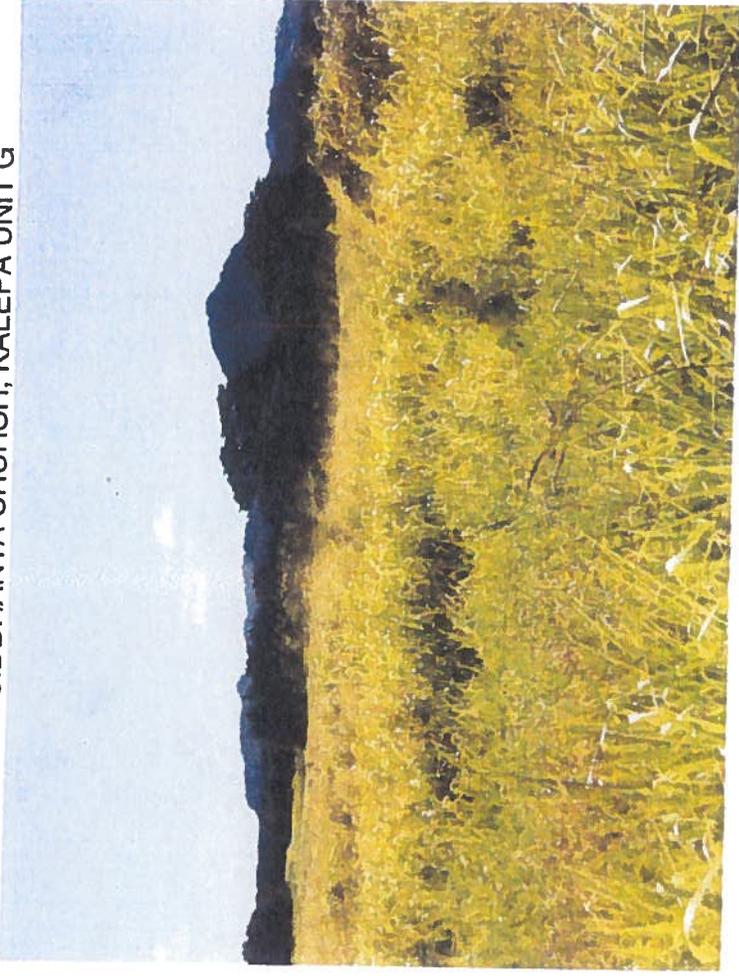


James J. Nakatani
Executive Director

Iliiliula North Wailua Ditch
5.8 Miles
**ADC Kalepa Land
Unit Map**



SAIVA SIDDHANTA CHURCH, KALEPA UNIT G



Forest Stewardship Management Plan

1. Applicant and project general information

Applicant Name: Adiyana Hara

Mailing Address, Email, Phone, Fax:

107 Kaholalele Road

Kapaa, HI 96746-9304

adi@hindu.org

1-808-635-5600

1-808-822-4351

Landowner name: State of Hawaii, Department of Agriculture, Agribusiness Development Corp.

Lease/License holder name: Saiva Siddhanta Church

Effective date of lease and lease term: 35 Year Land License Agreement, May 2013

Address and Tax Map Key number(s) of project location: Wailua, Lihue, Hawaii, Kauai, Hawaii (Kalepa)

Tax Map Key (4) 3-9-2: Portion 1, Unit G (This is one portion of a larger parcel which is managed by the Agribusiness Development Corp. Because it is not a separate parcel ADC cannot give a lease but instead must use a land "license" agreement.)

State Land Use and County Zone designation: Agricultural. The land is bordered by Conservation District designated land but does not include any Conservation land in this plan.

Driving directions from the nearest highway: In Kapaia, turn Mauka onto Maalo Road, (State Hwy 583 towards Wailua Falls) Drive approx 2.25 miles and turn left onto cane road. Take first left and proceed through gate for 2 miles. Just past the Hanamaulu airstrip take a right turn and you are on the parcel. Go through the gate and past the reservoir and you will see quonset shaped tractor tent.

Property acreage: 312 acres of which 217 is usable fields

Proposed acres in stewardship management area: Roughly 80 acres

Exhibit C

Elevation: 400 ft.

Slope: Most of the usable fields are relatively flat. There are slopes on some useable land that are less than 30 degrees. In the non-useable land there are near vertical areas.

One Small Perennial Stream which flows into and out of a small resevoir.
The land also borders the Wailua River, North Fork.

II. Signature Page

Applicant Certification: This Forest Stewardship Plan has been prepared by the staff of Saiva Siddhanta Church in consultation with various consultants as listed in Appendix A. The Church agrees to follow the resource practices and management activities that follow and to implement them on the lands described. Should the Church sell or transfer all or part of the stewardship managed property during the term of the approved contract agreement, it is understood that we are required to pay back to the state all of the cost-share funds received in the previous three years (or the portion of funding that corresponds to a pro-rated share of that portion of the managed property that is sold or transferred). Because the purpose of this project is largely commercial forestry, the Church agrees to pay 4% of the profits back to the Forest Stewardship Program at the time of sale of the timber. As required for commercial forestry grants, the length of this contract is 30 years.

Saiva Siddhanta Church


Signature of Saiva Siddhanta Church Representative

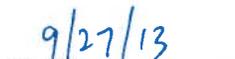

Date

BODHINATHA VEYLANA
Name of Representative

State Forester's Approval: This plan meets the criteria established for the Forest Stewardship Plans by Hawaii's Forest Stewardship Advisory Committee. The practices recommended in the plan are eligible for funding according to the State of Hawaii Forest Stewardship Program guidelines and administrative rules.

Approved by:


Signature of Forester


Date


Name of Forester

Forest Stewardship Committee Approval:

Signature of Committee Representative

Date

III. Introduction

• Vision and Long Term Goals

Our vision for the proposed project is five fold:

- 1) To provide a viable timber endowment of Koa and Mahogany for our monastery and temple.
- 2) To help develop a viable variety of Koa from Kauai seed that is disease and pest resistant at low altitudes on Kauai and has best possible form.
- 3) To provide stable riparian barriers of native Koa for long term protection of the wetlands and small waterways on the property.
- 4) To provide a production field trial for the premier Koa bred by HARC for form and disease resistance.
- 5) To develop a knowledge of and to grow economically viable native sandalwood and to make the seeds and knowledge available, particularly to island reforestation projects. We will use existing *Causaranina cunninghamiana* as a host tree, but will be investigating native trees as possible future hosts, including Koa.

• Funding

Our vision of this project is to use the Conservation Reserve Enhancement Program for funding of riparian barriers consisting of native Koa and sandalwood, and to use funding from the DLNR Forestry Stewardship Program to fund growing of Honduras mahogany.

• Description of the Property

The property currently is relative flat grassland and where not cultivated by us it is covered primarily with guinea grass. It is bordered on one side by the North Fork of the Wailua River. It has one small stream which feeds a tiny resevoir on the subject property and an abandoned irrigation ditch which used to draw from the North Fork of the Wailua. There are several gullies and marshy areas.

The trade winds coming off the ocean are funneled along the valley formed by the Wailua River and directly impact the subject property. This is more pronounced by the flatness of the land and lack of large trees on much of the property.

• Overview of the Property Specific Management Objectives

1. Control invasive species.
2. Minimize effect of wind on trees.
3. Long term improvement of soil and general ecology.

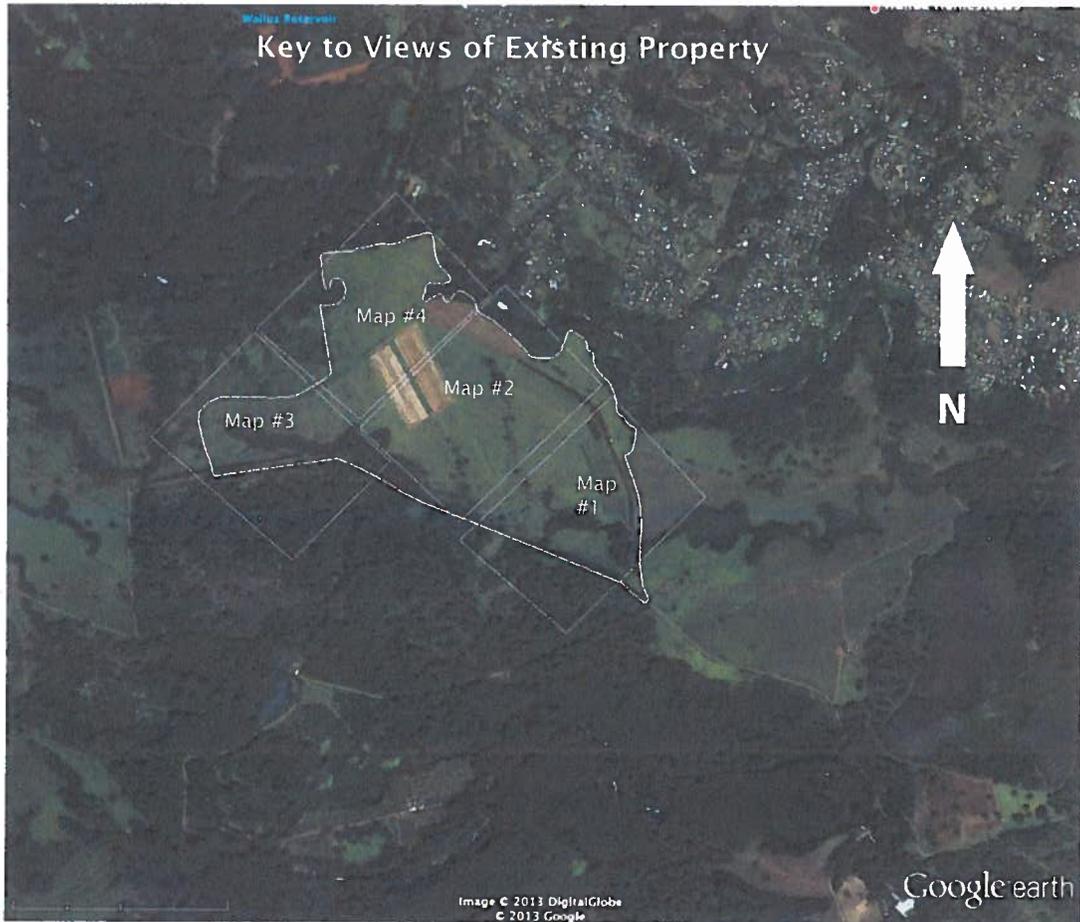
4. Provide genetically superior seeds of endemic Kauai Koa specifically for low altitude plantations and reforestation on Kauai.
5. Provide seeds of native sandalwood for future plantings of sandalwood.
6. Riparian barriers of Koa for small stream, resevoir and wetlands.
7. First large scale production trial of HARC Koa bred for resistance to Koa Wilt.

• Detailed Maps showing the Location and Attributes of the Project

Project Location



Project Attributes



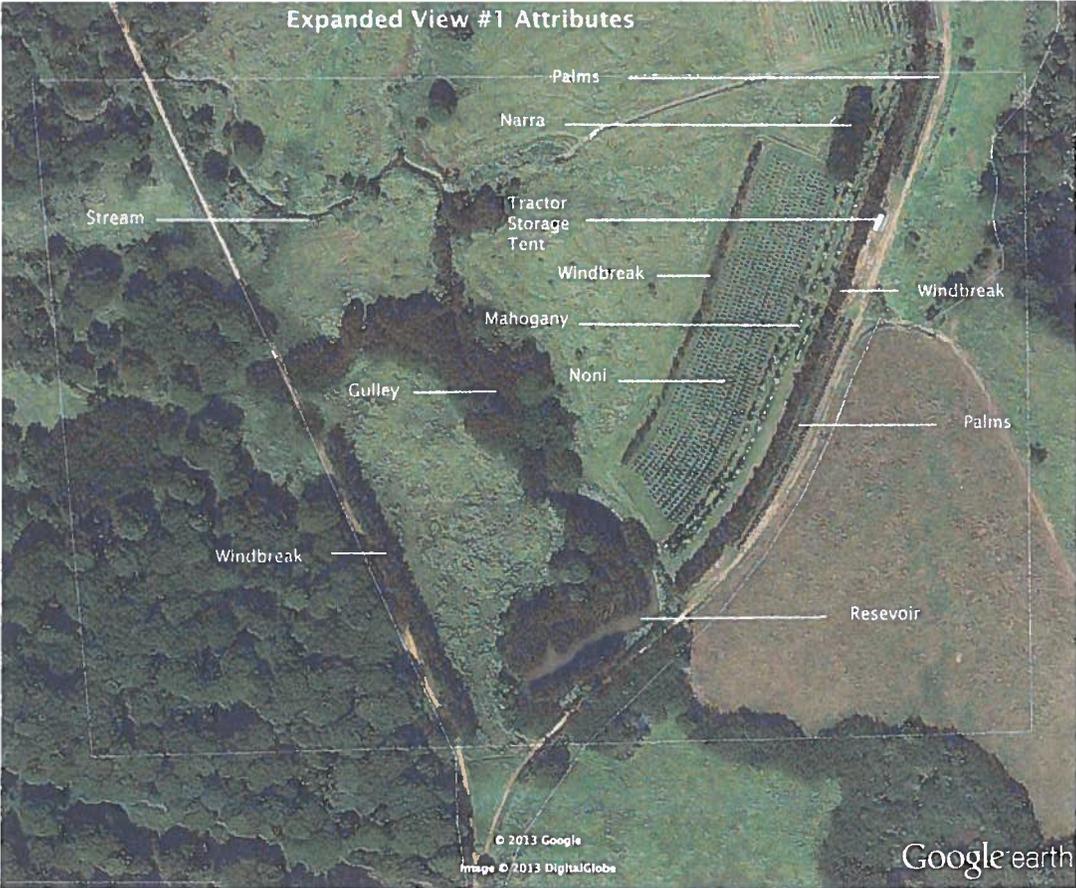
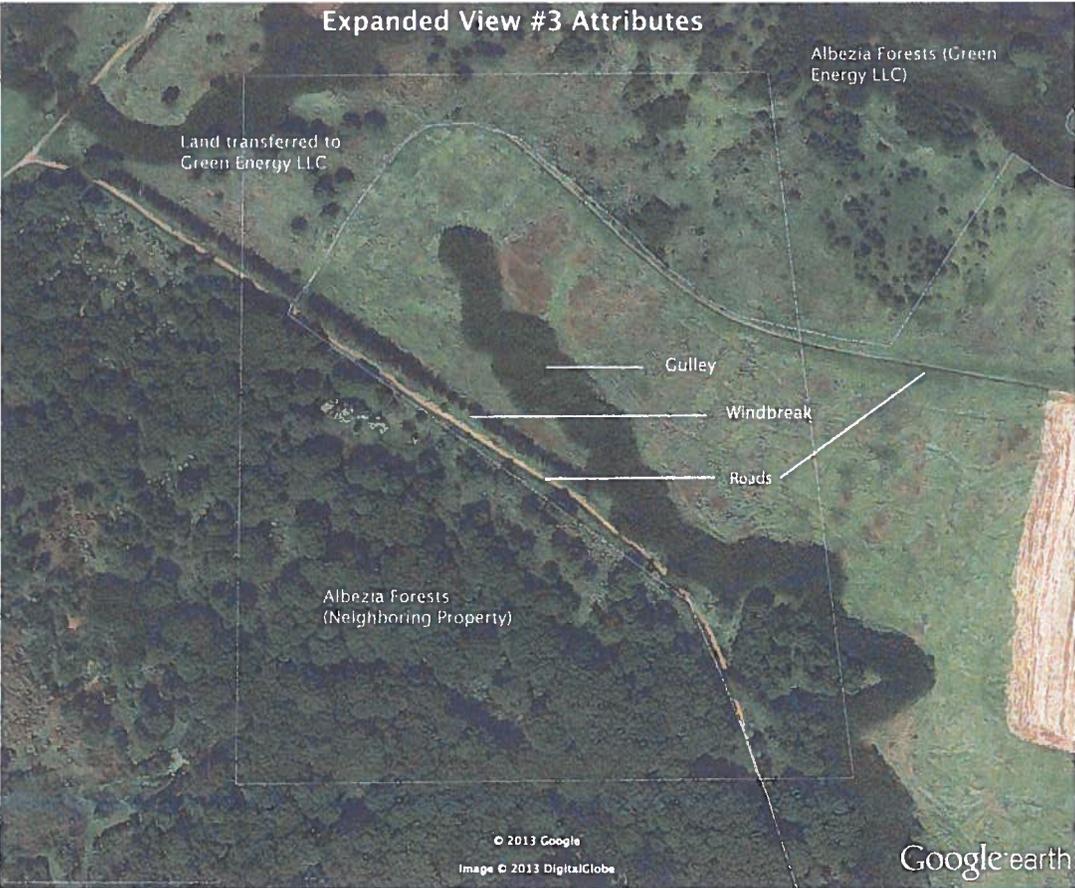
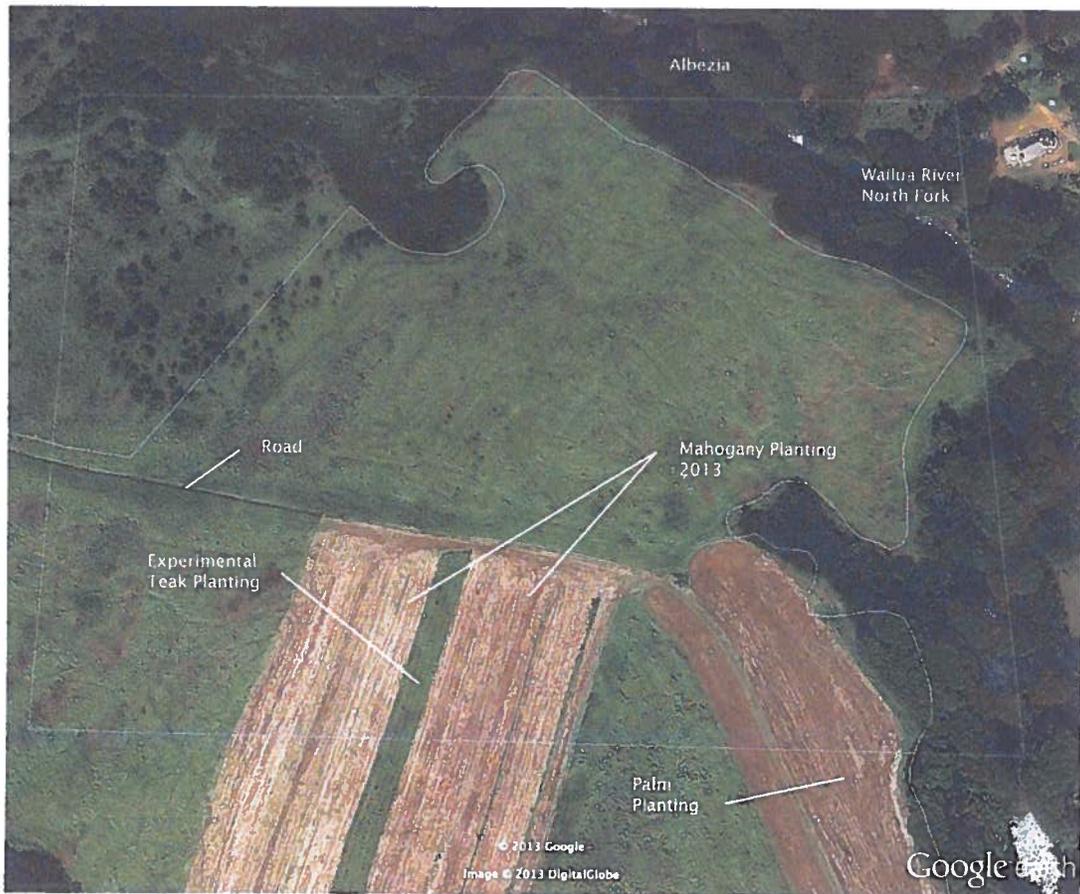


Exhibit C







• **Brief History of Land Uses and Present Condition**

The land was formerly Lihue Plantation cane land (See Lihue Plantation Field Map, Appendix B) and became available when Lihue Plantation ceased operations. At that time Lihue Plantations was leasing a large parcel, approximately 6,500 acres. The Department of Land and Natural Resources made the decision to divide the parcel into smaller sub parcels and to make them available to smaller agricultural concerns. We received a revocable month to month agreement for 416 acres in 2001. When we leased the land from the DLNR, it was covered with sugar cane and the soil was highly degraded. We first mowed then harrowed the sugar cane repeatedly and it was replaced by guinea grass, (*Panicum maximum*), and sprouting albezia trees, (*Falcataria moluccana*).

In 2004, we established our first planting of Koa (*Acacia koa*). Twenty three Koa trees survive at this time, but many are dying from what appears to be Koa Wilt.

In 2005 we began planting experimental plots of Honduras mahogany, (*Swietenia macrophylla*), interplanted with a few Indian rosewood trees, (*Dalbergia sissoo*). The rosewood is a legume and we wanted to ascertain the degree to which it might improve the growth of the mahogany.

Of the mahogany, the best trees show a growth rate of .9 inches dbh. However there is considerable variability in the growth rate of all our plantings, which is our current focus of research. At this same time, we purchased ironwood seedlings, (*Causarina cunninghamiana*), from the state nursery and established nearly a mile of double row windbreaks which have done well.

In 2005 we received and established approximately 60 large cuttings of Narra (*Pterocarpus indicus*). We planted these in a tight group and have maintained regular pruning to encourage vertical rather than lateral growth.

We have continued plantings of Mahogany and in 2006 and 2007 also established experimental plantings of Teak (*Tectona grandis*). Again, some of the teak has grown well but there is considerable variation in the growth rate.

We now have approximately 1,300 Mahogany of various sizes, 300 Teak, 60 Narra, 23 Koa, and 10 Indian rosewood.

More than 20 years ago we planted several Indian sandalwood trees (*Santalum album*), on another parcel of land near the subject parcel and these did very well for a long period of time. Several died, primarily due to a loss of their host trees, but several are doing well. This encouraged us to look into planting sandalwood on the subject parcel and in 2009 we began researching host trees for sandalwood. We also began corresponding with several knowledgeable individuals regarding native Hawaiian sandalwoods.

In 2012 we attended the International Sandalwood Symposium held in Honolulu. Information from that meeting helped solidify our plans to plant native sandalwood and in early March, 2013 we planted 33 native sandalwood (*Santalum paniculatum*) on the parcel as a seed source for other plantings. To avoid hybridization, we are planting no other varieties of sandalwood on the subject parcel. Because this has been planted prior to our plan approval we have decided to separate these trees from our management plan, but we do plan to establish 100 more native sandalwood which have been included in the management plan.

Research in India has shown that ironwood is an excellent host for sandalwood, but it is now considered invasive in Hawaii, and so we have continued investigating other possible host trees, especially those that are native to Hawaii. We are consulting with Dr. Ananth Padmanabha, of Bangalore, South India who is one of the

foremost sandalwood consultants and have been offered the services of a private research facility in Australia which specializes in sandalwood and its oil content.

Our original desire to plant large acreage of Koa was reined in by the possibility of losing much of our planting to disease. In 2012 we contacted Nick Dudley of the Hawaii Agriculture Research Center in search of a possible solution. He informed us that research has shown that natural genetic resistance to koa wilt exists in wild populations and that the frequency of resistance can be increased through selection and breeding. Hawaii Agriculture Research Center (HARC), has developed a screening protocol that can quickly assess koa seedlings for resistance to koa wilt. Specifically, this project will use HARC's methods to identify resistant koa seed sources for use in this reforestation project. This will provide the opportunity to plant genetically adapted, eco-region specific, disease resistant koa seedlings for low elevation sites on Kauai. We plan to also provide a riparian barrier of native trees and a production field trial of genetically superior Koa that has already been developed by HARC.

In other areas, not related to the Forest Stewardship program, we planted five acres of certified organic noni trees in 2006 which are thriving and in 2011 we established a wholesale nursery for palms and other landscape plants, both endeavors designed to support the maintenance of the land and the establishment of our hardwood plantings.

By the governor's executive order, the subject land was transferred from the DLNR to the Agribusiness Development Corp. in 2009. At that time 86 acres of the land were split off from our parcel and were included in a license agreement between the ADC and Green Energy LLC for biomass production, leaving us with our current parcel.

IV. Land and Resource Description

• Existing vegetation/forest cover types

The proposed area is covered with guinea grass with some “rattlypod” (*Crotolaria sp.*) and “sleeping grass” (*Mimosa pudica*). Due to albezia trees on the borders of the planned project, there are large numbers of albezia seedings constantly sprouting and growing rapidly. There are some low lying wetlands bordering the project area, again mostly filled with guinea grass. Bordering uncultivated gulleys are filled with Hau, *Hibiscus tiliaceus*, and the small resevoir adjacent to the project area is filled with paperbark, (*Melaleuca quinquenervia*), and surrounded with both paperbark and haole koa, (*Leucaena leucocephala*).

A more complete list of plants includes:

Falcataria moluccana - Albezia (wild, invasive)

Swietenia macrophylla – Honduras mahogany

Tectona grandis - Teak

Pterocarpus indicus – Narra, Padauk

Dalbergia sissoo – Indian rosewood

Morinda citrifolia – Noni

Causarina cunninghamiana from state forestry nursery

Spathodea camanulata - African Tulip (wild, invasive)

Hibiscus tiliaceus – Hau (wild, invasive)

Melaleuca quinquenervia – Paperbark (wild, invasive)

Melaleuca alternifolia -Tea Tree

Leucaena leucocephala – Haole Koa

Santalum paniculatum – Native Hawaiian Sandalwood

Leucaena “KX4” – Experimental legume tree from CTAHR. Possible sandalwood host.

Palms:

Dyopsis lutescens – Areca palm

Phoenix roebelenii – Miniature date palm

Wodyetia bifurcata – Foxtail palm

Cyrtostachys renda – Sealing wax palm

Johannasteijsmannia altifrons – Joey palm

Bismarckia nobilis – Bismarkia palm

Assorted Aloe, Agave and Sansaviera in pots

Panicum maximum – Guinea grass (wild, invasive)

Mimosa pudica – Sleeping grass

Crotolaria sp. - Rattly pod

Assorted trees, weeds and vines growing wild.

- **Existing forest health and function including any invasive species, insect, rodent and/or fire threats**

The trees that we have planted, other than the koa, are mostly healthy at this time. The Koa has varying degree of disease from a full crown with no sign of disease to trees that have died, apparently from Koa Wilt.

Other than the trees we have planted, the area is entirely covered by invasive species. It is a degraded grassland with primarily guinea grass and albezia in all areas that are useable land.

There are feral pigs and rats on the property. To date they have done little damage, although it appears that small vertical slits on the trunks of some of the mahogany may come from the pigs. We are concerned about plantings of Koa and sandalwood being destroyed in the early stages by pigs and are including grow tubes in our plan for early protection.

We have had little problem to date with insect and rodent attack, other than the from Koa wilt.

- **Soils and their condition**

The following information is based upon soil tests, a custom NRCS soil report¹ (Included as a supplementary document) and personal observation. The soil is a degraded basalt. The topsoil is a silty clay with a ph of 4.5 to 5. The subsoil is typically a hard silty clay with a ph slightly over 7. (See soil and test reports, Appendix C). The soils contain an unusually high percentage of aluminum, which does not appear to have impeded the growth of any trees we have planted to date. Theoretically the first restrictive layer is at 80 inches depth or more although it is hard to know what changes the sugar cane companies have done to the topography and how this might have changed the underlying soils. The soils do have very good drainage with little flooding or ponding. These are generally excellent conditions for growth of Mahogany.

- **General slope and aspect**

The terrain is generally nearly flat. There are unuseable gulleys which cut through the property. Some limited areas that we plan to plant have a slope of up to 25 degrees.

On the North boundry of the property, the land drops away steeply to the North Fork of the Wailua River. There are two area which will be planted during this

¹ USDA, NRCS Custom Soil Resource Report for Island of Kauai, Hawaii

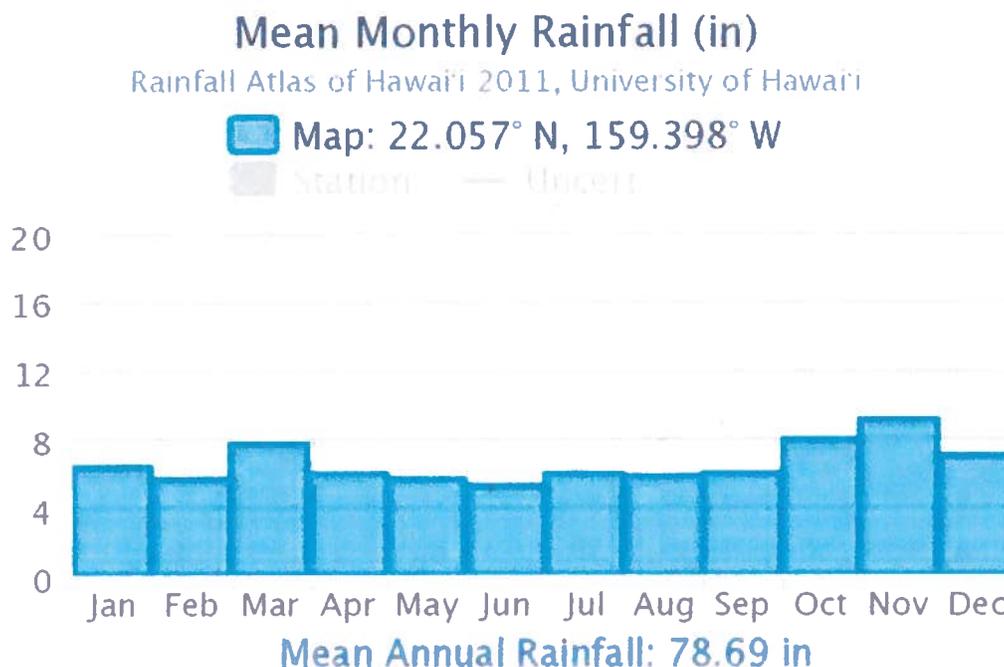
project which have slopes up to 25 degrees. On the more steeply sloping areas, all ripping and harrowing must go across the hill and tree lines planted across the hill and following the contours according to NCRS best management practices. In addition, the guinea grass will be allowed to grow back and to be kept mowed in areas other than the immediate vicinity of the tree to stabilize the soil from erosion.

• **Water resources and their condition**

There is one small perennial stream which feeds a small reservoir. We regularly pump water for our Noni field from the reservoir.

The Aahoaka ditch used to draw from the North Fork of the Wailua and provided irrigation for the land but it has been abandoned for years and is no longer serviceable.

An important water resource is the rain, with an average of just under 80 inches per year. The following chart and graph provide the average rainfall for the property from the Online Rainfall Atlas of Hawaii².



²

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte, 2012: Online Rainfall Atlas of Hawai'i. *Bull. Amer. Meteor. Soc.*, doi: 10.1175/BAMS-D-11-00228.1

Month	Map	Uncert.
January	6.33	0.62
February	5.66	0.66
March	7.74	1.32
April	6	0.93
May	5.73	0.81
June	5.3	0.73
July	6.05	0.67
August	5.87	0.89
September	5.98	0.66
October	7.84	1.28
November	9.07	0.95
December	7.12	0.96
Annual	78.69	3.13

• Timber resources

Other than albezia and trees planted by us over the past ten years, there are no timber resources on the property. However, in some limited areas the invasive trees on the property do provide wind protection, which will be utilized to provide protection for Koa.

• Wetland resources

There is a marshy area located on the property which is filled with invasive grasses and weeds and undeveloped at this time. We have seen no wetland birds in the area.

• Significant historic and cultural resources. State whether an archeological survey has been done.

The land included for this project has been the subject of intensive sugar cane cultivation for many years including burning, clearing by bulldozer and harvesting by excavators. There is little to no possibility of any kind of historical or cultural artifacts still in existence. Based upon this we have not requested an archeological survey.

- **Existing wildlife**

Birds:

Shamma Thrush

Quail

Chickens

Mammals:

Rats

Feral pigs

A few retired Milk cows (from our own dairy)

None of these has posed a serious threat to the mahogany and other trees we have planted on the property. However, we are concerned that the pigs may provide some threat to Koa or sandalwood seedlings and are planning to take precautions.

- **Threatened and endangered species existing on property**

We have not had a survey, but due to the cane harvesting and continual heavy cultivation of the area we believe that there are no threatened or endangered species on the land at this time. We will only be planting in areas that are former cane lands

- **Existing recreational and aesthetic values**

As from almost every site on Kauai, there are beautiful views of mountains and mountain ridges which are particularly spectacular from the land due to little interruption of the view by hills or large trees. Beyond that, the grassland contains little recreational or aesthetic values.

- **Infrastructure and access conditions**

The property can be accessed from the Northwest via a rough almost 4WD road and a ford of the North Fork of the Wailua River. It can also be accessed via Maalo Road from Kapahi. This road is also rough but better. There is a cane haul road around the entire perimeter of the property which gives easy access to all the fields.

As part of their acquiring lands, Green Energy LLC has agreed to improve the common element access roads and to maintain them.

V. Management Objectives and Practices

Tree and Shrub Site Preparation

Site preparation readies the site for tree planting, thus enabling successful establishment and management of the trees. We intend to follow essentially the same preparation, planting and maintenance practices for both production Koa and mahogany. This will be somewhat less rigorous than the practices used for the Koa seed orchard.

The procedures we intend to follow are:

Mowing

Preparing the land so that the tall grass is easily incorporated into the soil during the harrowing.

Harrowing two times

Residual guinea grass causes two problems, it makes planting extremely slow and costly and it tends to come back quickly, overtopping the newly planted seedlings and stunting their growth. Repeated harrowing combined with selective use of herbicides solves these problems for a period of time. The ground will be harrowed two times, two passes each, before ripping and one time, two passes after ripping. This will also loosen up the soil and make it easy to plant by hand.

Ripping

Ripping shatters the heavy clay soil, and breaks up any hardpan or heavily compacted subsoil. It also helps to remove roots of guinea grass. This in turns enables the trees to get an early start and to quickly put on growth to rise above the weeds and to ensure that the trees have a deep and extended root structure. We plan to rip only along the rows where trees will be planted to a width of three to four feet and a depth of roughly thirty inches. The rows will be laid out by GPS guidance so that we can plant in the same row at a later time.

Rock removal

Large rocks in the pasture must be removed to facilitate future mowing between the trees. This must take place after the harrowing and ripping have been completed as these activities bring new rocks to the surface.

Weed Control and Maintenance

Weeds compete directly for light, soil moisture and nutrients. As such, they can seriously impact seedling survival and growth. The intended weed control practices are:

- a) spraying of a pre-emergent herbicide once the final harrowing has occurred and just prior to planting of the trees.
 - b) spraying around the trees two times in the first year and twice in the second year. Spraying must follow proper application methods to avoid spraying the newly planted seedlings and to avoid contamination of waterways and adjacent crops. We will experiment with several regimes, including pre and post emergent sprays and a combination of the two to find the best regime to keep the grass from overcoming the seedlings with a minimum of work and maximum results as well as little or no damage to the trees. Herbicides considered include Fusilade, Goal and Polaris.
 - c) regular mowing is required, primarily during the summer and at the beginning of the winter season.
First year: four times, 2 to 3 months apart (more often in summer)
Second through Fourteenth year: three times per year
Thereafter: Yearly, primarily to control the sprouting of albezia.
- c) tree lines must be monitored regularly for albezia and other invasive trees.

Tree and Shrub Establishment

There are a number of different methods for growing and planting the seedlings, each with advantages and disadvantages. Windbreak trees will be purchased from the state forestry nursery and will be in small dibble tubes. Mahogany will be established by us in "Jiffy Pots". Native Hawaiian sandalwood will be purchased from the state forestry nursery or similar source and Koa seedlings will be furnished by Hawaii Agricultural Research Center.

The holes for planting will be created either by using a tree spade or a Hawaiian tree planting bar. Planting is critical and we will follow the NCRS BMPs for planting trees listed below:

- *Only viable, high-quality and adapted planting stock or seed will be used.*
- *Provide a 2-3 week acclimation period in-nursery or after transferring containerized planting material from nursery to planting site (if different location) by gradually transitioning seedlings from sunlight exposure and watering regime employed at the nursery to those at the planting site.*
 - *planting holes should be 1.5-2.0 times as wide and 1.0-1.5 times as deep as the the dibble tube or pot size.*
 - *Plant seedlings so root collars are at or slightly below (0.5") planting site grade.*
 - *The appropriate amount of coated slow-release fertilizer (NPK + micronutrients) shall be placed into each planting hole & covered w/ a small volume of soil to prevent direct fertilizer contact w/ seedling roots or cuttings.*
 - *Tree and shrub planting work should be completed 2 weeks to 6 months after Tree/Shrub Site Preparation*

- *When site preparation (if any) is complete, non-irrigated sites shall be planted as early after the onset (1" of rainfall during a 2 week period) of the rainy season as possible. Avoid planting on hot, windy days.*³

We will either use a farm tractor and trailer or a pickup truck to haul trees and supplies. The vehicle will be equipped with a standard agricultural GPS guidance system to assure uniform positioning of rows and trees within the row.

Windbreaks

We will establish approximately 6,000 feet of windbreak. These will consist of three rows of trees, twelve feet apart. Row one will be Tree Spinach, (*Cnidocolus chayamansa*). Row two will be Narra (*Pterocarpus indicus*), planted from cuttings and pruned to encourage initial vertical growth before the canopy spreads out. Row three will be Norfolk Island pine, (*Araucaria heterophylla*) which grows well in this area. Seedlings will be obtained from the state tree nursery and will be established 10 ft apart. Rows will be 20 ft apart. We are currently growing all three of these trees and know that they do well in this area. Tree spinach, chaya, is a hardy, fast-growing shrub that will grow to five meters. It establishes and grows easily with little care. Narra seems to maintain a medium height and fills out with a sturdy thick crown which will serve well as a windbreak middle row. We will, however, give an additional five feet between the Narra and the Chaya so that the spreading crown of the Narra will not overshadow the Chaya.

Nutrient Management

Experience and studies have shown that environmental factors are more important to a tree's initial growth than are genetic factors. Only after a tree has become established do genetic factors become equally important. This emphasizes the need for a balanced fertilizer to be applied at planting and repeated thereafter several times until the tree becomes well established.

Plantings must use a balanced fertilizer at time of planting and continued fertilization at the four month, eight month and one year period. This must be in conjunction with proper weed control so that the fertilizer goes to the trees rather than to weeds.

Soil tests (Appendix C) have been analyzed for growing noni and other crops on sections of the land and give us general indications of the needs of the soil. However, it is required that additional samples be taken and analyzed for each of the six planting areas so that specific needs of the trees can be addressed.

³ NRCS, Field Office Technical Guide for Hawaii Website, Forestry Area Planting Practices Jobsheet, April 2013 "<http://efotg.sc.gov.usda.gov/treemenuFS.aspx>"

Tree and Shrub Pruning

One of the many advantages of growing Honduras Mahogany is that the tree tends to be self pruning and to maintain good form. We hope to develop a good commercial form for our production Koa by protecting from wind and other problems, rather than by pruning. However it may be necessary to prune the first row of the windbreak to encourage lower, more dense growth of the trees.

Fuel Break

Although there is a decreased chance of fire in the planned area due to high rainfall, there are times of reduced rain and dry grass. We feel that the best method of fire control is to mow regularly between the trees, keeping the grass low enough to limit or eliminate the chance of extensive grass fires.

Forest Health and Protection

Other than the practices listed above, there is little anticipated need for additional forest health or protection. The one exception is the protection of sandalwood seedlings from feral pigs. For this purpose, tree tubes and stakes will be provided. Also systemic herbicides such as glyphosphate cannot be used on weeds and grasses near sandalwood due to the chance that the grass or weed will be a host for the sandalwood and the herbicide will be transferred to the sandalwood. Therefore we will use three foot square of water permeable weed mat around each sandalwood seedling.

Monitoring and Maintenance

We will keep growth records for each planting, up through the tenth year and every two years thereafter. These will be reported to the Forest Stewardship forester. In addition, Dr. Nick Dudley will be monitoring the Koa plantings. Maintenance shall consist of mowing guinea grass between rows of trees two times per year plus any additional practices which are shown to be needed over time at least until the fourteenth year. General observation of conditions will take place during the mowing.

Fence

In the past we have successfully kept cows among mahogany trees after their crown has grown beyond reach of the cows. This is effective use of the land and helps to keep the grass down as well. We plan to do this as an ongoing practice with 20 acres of the land which will require 6,000 ft of fencing. This will be triple strands of barbed wire. There will be one simple gate for entrance and it will consist of double wooden corner posts, t-Posts every 10 ft. Estimates will be obtained from 3 contractors for this work.

Exhibit C

If we were keeping larger numbers of cows, paddocking would be important to maintain the quality of the pastureland. However, between the two areas we currently have fenced for the cows and due to the small number of cows we retire from our monastery dairy, paddocking is not necessary.

We will also put roughly 2,000 ft of specially reinforced fence around the Koa field, Field 6B and, if necessary, the sandalwood, to keep pigs from destroying the trees. The fence will be heavy duty hog wire with a second layer of hog wire in an L shape at the bottom to keep pigs from digging and forcing their way under the fence. Estimates will be obtained from three contractors for this work. Although the actual Koa planting will cover less than an acre, we will fence in and maintain somewhat over 2 acres to allow tractor mobility when mowing, etc.

VI. Practice Implementation Schedule

We have divided the property into eight areas: Koa seed orchard, Sandalwood planting, Windbreaks and five separate production plantings of Mahogany and Koa.

Because we are not sure when the actual funding will be approved and work will begin, we have not assigned a calendar year, but we have divided the projected planting into six yearly segments. Each segment must be timed so that tree planting takes place during the cooler parts of the year:

Year 1 Prepare for and plant 6,000 ft of triple row windbreaks.
(1800 seedlings, 5.5 acres total)
Prepare for and plant 2 acres Koa and Sandalwood
Reinforce fence around the Koa
Planting #1 - Prepare for 10.1 acres of Mahogany

Year 2 Planting #1 - Plant 10.1 acres of Mahogany
Planting #2 - Prepare for 15 acres of Mahogany

Year 3 Planting #2 - Plant 15 acres of Mahogany
Planting #3 - Prepare for 12.9 acres of Koa

Year 4 Planting #3 - Plant 12.9 acres of Koa
Planting #4 - Prepare for 23.2 acres of Koa

Year 5 Planting #4 - Plant 23.2 acres of Koa
Planting #5 A- Prepare for 11.1 acres of Mahogany
Planting #5 B- Prepare for 3 acres of Koa
Planting #5 C- Prepare for 7.33 acres of Koa

Year 6 Planting #5A - Plant 11.1 acres of Mahogany
Planting #5B - Plant 3 acres of Koa
Planting #5C - Plant 7.33 acres of Koa

Year 8 Fence for cattle around Mahogany planting

A note to the following expenses, we have a 145 HP Case with four wheel drive and dual drive wheels on the back. It is able to successfully do work, such as harrowing and ripping, which would otherwise have to be done by a hired bulldozer. We would like to propose to the Forestry Stewardship Committee that a costshare amount of \$105 per hour be accepted for this tractor. An analysis of how we arrived at this figure is available in Appendix D.

Budgets

NOTE: The CREP values in the following budgets are based upon calculations following FSP guidelines and do not reflect actual CREP payments which will evolve based upon meetings with NFA, NRCS and DOFAW representatives.

Implementation Schedule Year 1

Prepare and Plant windbreaks, 1800 trees in triple rows, spaced at 20 ft apart

6,000 ft total windbreak, 5.5 acres

Prepare for and plant 1 acre each of Koa and Sandalwood

Prepare for #1 Planting, 10.1 Acres of Mahogany

Koa and Sandalwood, 300 seedlings for seed sources

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Site Prep	Tree Site Prep 490	2 Acres	1,194.00	2,388.00	1,194.00		1,194.00
Tree and Shrub Estab.	Tree & Shrub Est. 612	300 Seedlings	5.45	1,635.00	817.50		817.50
Fencing	Fence 382	2000 ft	*	*	*	*	

Windbreaks Total of 5.5 acres, 1800 seedlings

Site Prep	Tree Site Prep 490	5.5 Acres	1,194.00	6,567.00	3,283.50	3,283.50	
Tree and Shrub Estab.	Tree & Shrub Est. 612	1800 Seedlings	4.45	8,010.00	4,005.00	4,005.00	

Planting #1, 10.1 Acres Mahogany

Site Prep	Tree Site Prep 490	10.1 Acres	1,194.00	12,059.40	6,029.70	6,029.70	
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Year Totals

Total Cost	\$30,659.40
Landholder Share	\$15,329.70
FSP Share	\$13,318.20
CREP Share	\$2,011.50

* Bids to be obtained from three contractors

Exhibit C

Implementation Schedule Year 2
 Maintain Windbreaks, Koa and Sandalwood
 Plant and maintain 10.1 Acres of Mahogany - 10' x 13' spacing
 Prepare for Planting 2A & 2B, 15 acres of Mahogany - 10' x 13' spacing

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Nutrient Management	Nutr Mngt 590	2 Acre	279.00	558.00	279.00		279.00
Weed Control	Herb. Weed Control 315	2 Acre	524.00	1,048.00	524.00		524.00

Windbreaks Total of 5.5 acres, 1800 seedlings

Nutrient Management	Nutr Mngt 590	5.5 Acre	279.00	1,534.50	767.25	767.25	
Weed Control	Herb. Weed Control 315	5.5Acre	524.00	2,882.00	1,441.00	1,441.00	

Planting #1, 10.1 Ares Mahogany

Tree and Shrub Estab.	Tree & Shrub Est. 612	3,384 Seedling	4.45	15,058.80	7,529.40	7,529.40	
Nutrient Management	Nutr Mngt 590	10.1 Acre	279.00	2,817.90	1,408.95	1,408.95	
Weed Control	Herb. Weed Control 315	10.1 Acre	524.00	5,292.40	2,646.20	2,646.20	

Planting #2, 15 Acres Mahogany

Site Prep	Tree Site Prep 490	15 Acre	1,194.00	17,910.00	8,955.00	8,955.00	
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Total Costs	47,101.60
Landholder Share	23,550.80
FSP Share	22,747.80
CREP Share	803.00

Implementation Schedule Year 4
Maintain Windbreaks, Koa and Sandalwood, Mahogany Plantings
Plant and maintain 12.9 Acres of Mahogany and Koa
Prepare for Planting 4, 23.2 acres of Koa - 10' x 13' spacing

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Weed Control	Herb. Weed Control 315	2 Acres	524.00	1,048.00	524.00		524.00

Windbreaks Total of 5.5 acres, 1800 seedlings

Pruning	Tree & Shrub Pruning 660	1800 Seedling	1.42	2,556.00	1,278.00	1,278.00	
Weed Control	Herb. Weed Control 315	5.5 Acres	524.00	2,882.00	1,441.00	1,441.00	

Planting #1, 10.1 Acres, Mowing

Weed Control	Herb. Weed Control 315	10.1 Acres	524.00	5,292.40	2,646.20	2,646.20	
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Planting #2, 15 Acres, Spraying and mowing

Nutrient Management	Nutr Mngt 590	15 Acres	207.00	3,105.00	1,552.50	1,552.50	
Weed Control	Herb. Weed Control 315	15 Acres	437.00	6,555.00	3,277.50	3,277.50	

Planting #3, 12.9 Acres Koa

Tree and Shrub Estab.	Tree & Shrub Est. 612	5611 Seedling	4.45	24,968.95	12,484.48		12,484.48
Nutrient Management	Nutr Mngt 590	12.9 Acres	279.00	3,599.10	1,799.55		1,799.55
Weed Control	Herb. Weed Control 315	12.9 Acres	524.00	6,759.60	3,379.80		3,379.80

Planting #4, 23.2 Acres Koa

Site Prep	Tree Site Prep 490	23.2 Acres	1,194.00	27,700.80	13,850.40		13,850.40
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Total Costs	\$84,466.85
Landholder Share	\$42,233.43
FSP Share	\$10,195.20
CREP Share	32,038.23

Exhibit C

Implementation Schedule Year 5
Maintain Windbreaks, Koa and Sandalwood, Mahogany Plantings
Plant and maintain 23.2 Acres of Mahogany
Prepare for Planting 5A, 5B & 5C, 19.6 acres of Mahogany - 10' x 13' spacing

Koa and Sandalwood, 300 seedlings for seed sources

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Weed Control	Herb. Weed Control 315	2 Acres	524.00	1,048.00	524.00		524.00

Windbreaks Total of 5.5 acres, 1800 seedlings

Weed Control	Herb. Weed Control 315	5.5 Acres	524.00	2,882.00	1,441.00	1,441.00	
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Planting #1 and 2, 25.1 Acres, Mowing

Weed Control	Herb. Weed Control 315	25.1 Acres	524.00	13,152.40	6,576.20	6,576.20	
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Planting #3, 12.9 Acres of Koa, Spraying and mowing

Nutrient Management	Nutr Mngt 590	12.9 Acres	207.00	2,670.30	1,335.15		1,335.15
Weed Control	Herb. Weed Control 315	12.9 Acres	437.00	5,637.30	2,818.65		2,818.65

Planting #4, 23.2 Acres of Koa

Tree and Shrub Estab.	Tree & Shrub Est. 612	7192 Seedlings	4.45	32,004.40	16,002.20		16,002.20
Nutrient Management	Nutr Mngt 590	23.2 Acres	279.00	6,472.80	3,236.40		3,236.40
Weed Control	Herb. Weed Control 315	23.2 Acres	524.00	12,156.80	6,078.40		6,078.40

Planting #5, 21.4 Acres Mahogany and Koa

Site Prep	Tree Site Prep 490	21.4 Acres	1,194.00	25,587.42	12,793.71	6,626.70	6167.01
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Total Costs	\$101,611.42
Landholder Share	\$50,805.71
FSP Share	\$14,643.90
CREP Share	36,161.81

**Implementation Schedule Year 7
Maintain Windbreaks, Koa and Sandalwood, Mahogany Plantings**

Koa and Sandalwood, 300 seedlings for seed sources

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Weed Control	Herb. Weed Control 315	2 Acres	225.00	450.00	225.00		225.00

Windbreaks Total of 5.5 acres, 1800 seedlings

Weed Control	Herb. Weed Control 315	5.5 Acres	225.00	1,237.50	618.75	618.75	
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Planting #1, 2, 3 and 4 , 61.2 Acres,
Mowing

Weed Control	Herb. Weed Control 315	61.2 Acres	225.00	13,770.00	6,885.00	2,823.75	4,061.25
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Planting #5, 21.4 Acres, Spraying and mowing

Nutrient Management	Nutr Mngt 590	21.4 Acres	207.00	4,429.80	2,214.90	1,148.85	1,066.05
Weed Control	Herb. Weed Control 315	21.4 Acres	524.00	11,213.60	5,606.80	2,908.20	2,698.60

Total Costs	\$31,100.90
Landholder Share	\$15,550.45
FSP Share	\$7,499.55
CREP Share	8,050.90

**Implementation Schedule Year 8 Through 10
Maintain Windbreaks, Koa and Sandalwood, Mahogany Plantings**

Koa and Sandalwood, 300 seedlings for seed sources

Practice Component	NRCS Code	Unit	Cost/Unit	Total Cost	Landholder	FSP	CREP
Monitor & Maint	Herb. Weed Control 315	2 Acres	180.00	360.00	180.00		180.00

Windbreaks Total of 5.5 acres

Monitor & Maint	Herb. Weed Control 315	5.5 Acres	180.00	990.00	495.00	495.00	
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Planting #1, 2, 3, 4 and 5 , 82.6 Acres,
Mowing

Monitor & Maint	Herb. Weed Control 315	82.6 Acres	180.00	14,868.00	7,434.00	3,258.00	4176.00
Fencing	Fence 382	6,000 ft	*	*	*	*	

Total Costs	\$16,218.00
Landholder share	\$8,109.00
FSP Share	\$3,753.00
CREP Share	4,356.00

* Three bids will be obtained from contractors in Year 8.

Cost for years 8 through 10 total is \$48,654.00	
Landholder Share	\$24,327.00
FSP Share	\$11,259.00
CREP Share	\$13,068.00

VII. Budget Summary

Total Costs Unadjusted for Inflation

Year	Total Costs	Landholder	FSP	CREP
1	30,659.40	15,329.70	13,318.20	2,011.50
2	47,101.60	23,550.80	22,747.80	803.00
3	62,805.70	31,402.85	23,177.55	8,225.30
4	84,466.85	42,233.43	10,195.20	32,038.23
5	101,611.42	50,805.71	14,643.90	36,161.81
6	99,948.05	49,974.03	25,020.38	24,953.65
7	31,100.90	15,550.45	7,499.55	8,050.90
8 Through 10	48,654.00	24,327.00	11,259.00	13,068.00
Totals	506,347.92	253,173.96	127,861.58	125,312.39

Total Costs Adjusted for 5% inflation in Year 5

Following the caution in the FSP Handbook, we have adjusted for inflation halfway through the term of the grant. To keep things relatively simple, we did not compound annually, but adjusted for an additional 5% in year 5 and each year thereafter.

	Total Costs	Landholder	FSP	CREP
1	30,659.40	15,329.70	13,984.11	2,112.08
2	47,101.60	23,550.80	23,885.19	843.15
3	62,805.70	25,404.50	24,336.43	8,636.57
4	84,466.85	42,233.43	10,704.96	33,640.14
5	106,691.99	53,346.00	15,376.10	37,969.90
6	104,945.45	52,472.73	26,271.40	26,201.33
7	32,655.95	16,327.97	7,874.53	8,453.45
8 Through 10	51,086.70	25,543.35	11,821.95	13,721.40
Totals	531,665.32	265,832.66	134,254.66	131,578.01

Value

We realize that there are risks involved when investing in any tree plantation, including but not limited to hurricanes, fire and pests. Mahogany's relative resistance to these risks is one of the reasons that we selected it as a crop tree.

According to "The Silviculture of Mahogany"⁴ main countries where mahogany is grown and hurricanes are prevalent, "*mahogany is often preferred to other plantation species because of its ability to survive strong winds with relatively little damage to the crown.*" However, "Despite the ability of mahogany trees to survive hurricanes better than most other species, damage may be substantial" and can take up to 4 years to recover. Ripping the soil prior to planting is also intended to give deep root penetration during the initial stages of growth, which will further enhance the ability of the trees to withstand high winds.

We intend to mow regularly when the trees are young to reduce chance of fire. There is some evidence that mature trees are resistant to low intensity ground fires, however this does remain a threat even in our fairly high rainfall area, and could possibly reduce the value of the crop.

Hawaii is one of the few mahogany growing areas which does not have the shoot borer *Hypsipyla* spp which can cause considerable damage to Mahogany trees and production. Should this pest make its way to Kauai, it could greatly decrease the value of the trees. Diversification is one method of mitigating the dangers of loss to pests or disease, planting multiple species of trees. We considered this and experimented with other species of trees.

We also consulted with Dr. J. B. Friday in 2005 before making our decision and his thoughts at that time were: "*The major pest of Swietenia is the shoot borer, Hypsipyla grandella, and we don't have that pest in Hawaii, yet. It only bothers young trees, so if trees were established for 5 years or so before the pest gets here they'd be ok. I don't know of any other diseases that catastrophically affect otherwise healthy trees, and I've never seen any diseases out of the ordinary on mahogany here. Of course any tree can get root rots if the soil is poorly drained, leaf spot on old leaves, etc., but these disease should be controllable or not serious.*"

Recently we also discussed the problem with Dr. Nick Dudley of HARC. He commented. "*Regarding possible importation of pests, phytosanitary steps are taken to ensure the risk of importation of pest is very limited. In the case of the shoot borer, vegetative material is required (seedlings or cutting), so importation of seed has almost no risk.*"

Based upon the high value, relatively low maintenance and success of other island growers, as well as the above conversations, we decided to grow Mahogany as a monocrop. (The exception is our recent experimental expansion into growing Sandalwood and Koa. If our planned plantings of sandalwood and Koa are successful, we may do more such plantings in the future.)

4

J. . Mayhew and A. C. Newton "The Silviculture of Mahogany" 1998 CABI Publishing

Assuming that these risks are avoided and our plantation goes more or less to plan, we have used the CTAHR net present value analysis and have based our stump rate on some of the same information that was used for that analysis. Our growth information was derived from a chart on page 216 of "The Silviculture of Mahogany" to calculate relative return for our trees. The chart gave growth rates for four qualities of site, and we averaged the growth rate of the poorest two of the four sites. We acknowledge that these are estimates at best and there are a great number of variables which are unforeseeable. We have used relatively low stump values (the value if the trees are sold in situ and the purchaser is responsible for harvesting and all ensuing processes) because of the isolation of Kauai from lumber processing facilities and markets. One positive aspect is that there are a number of mahogany plantations already existing on Kauai so that the harvesting and marketing of mahogany will already have been developed on the island.

Based upon parameters from the above sources, we find the net present value in dollars per acre.

	Harvest in		
Stump value and Discount Rate	20 Yrs	30 yrs	35 yrs.
\$750/MBF, 4%	\$2,524.00	\$3,169.00	\$4,293.00
\$1250/MBF, 4%	\$5,969.00	\$7,146.00	\$9,057.00
\$750/MBF, 7%	\$238.00	\$315.00	\$697.00
\$1250/MBF, 7%	\$1,933.00	\$2,076.00	\$2,648.00

The indication is that, given the parameters, mahogany is an good investment if the interest rates stay low and the price is higher but may possibly not be as good an investment if interest rates are higher and prices are lower.

Koa has additional disease and pest risk that are not found with Mahogany, including but not limited to Koa Wilt. There is some chance that the entire production planting could be lost. Included as Appendix F is an excellent analysis from the Hawaii Forest Industry Association of the benefits and risks of planting Koa as a production hardwood. The article also includes net present values information for Koa.

The HFIA article stresses several important points, including breeding for disease resistance and form, planting and maintenance practices and the value of subsidies in controlling risk.

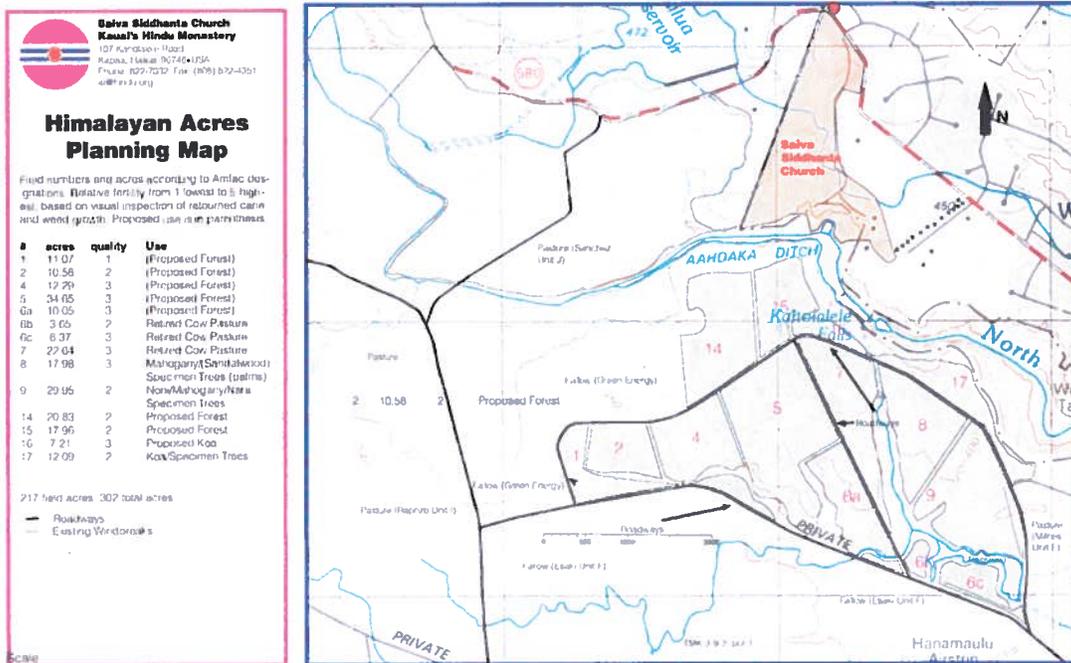
Appendix G gives a summary by the Hawaii Agriculture Research Center of their ongoing research under the guidance of Nick Dudley into improving Koa plantations genetically, both for form and for disease and pest resistance. We are proud to be working with Nick both to work to develop a seed orchard and trial plot of Koa that is endemic only to Kauai and which will be bred for disease resistance and form, and

also to be providing a trial production planting of the prime genetically selected families of trees identified and interbred by HARC. This should reduce the risk of our plantings of Koa as well as provide great benefit to the future of Koa in the Hawaiian Islands. It should be noted that our land is not only at almost exactly the same elevation as the Maunawili station of HARC but also gets almost exactly the same amount of rainfall.

We will be working carefully with Nick Dudley as well as drawing upon our own ten years of experience to provide the best possible planting and maintenance practices both for the Koa and the mahogany.

We are grateful for NRCS and DLNR funding of our plantation will also help to allay much of the concerns regarding financial risk.

VIII. Required Maps

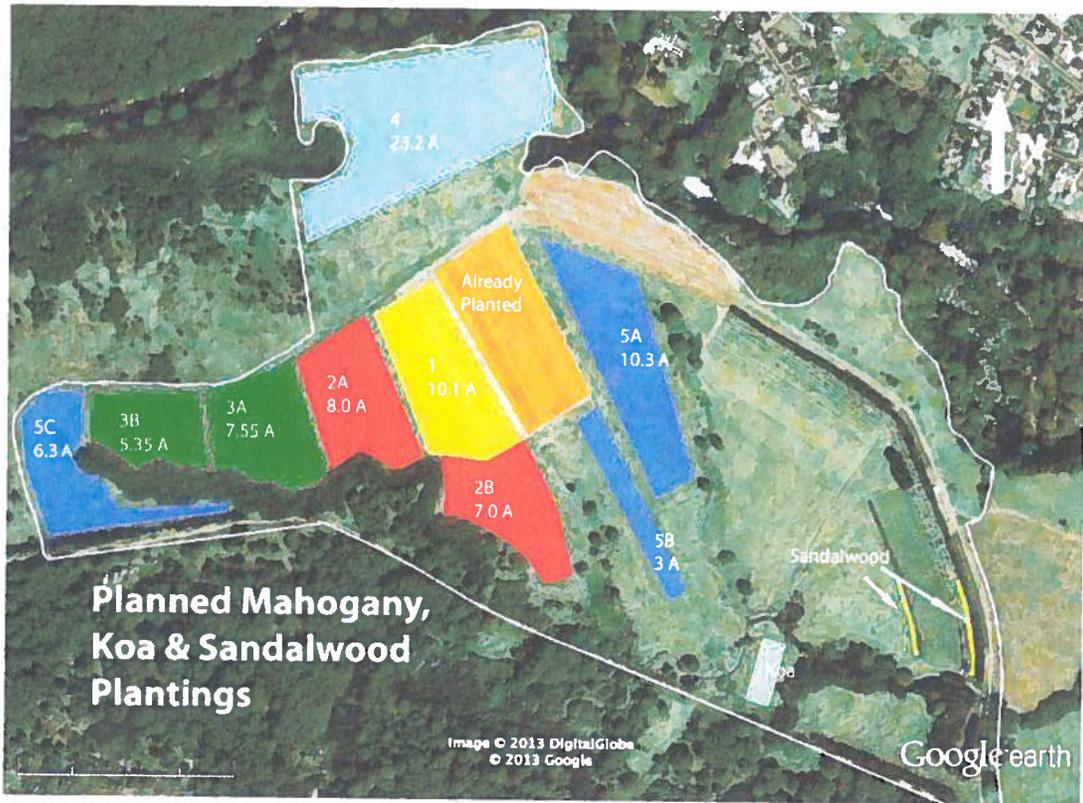


This map is somewhat confusing because the field numbers are based not upon our proposed plantings, but upon the original Lihue Plantation map found in Appendix B.

Exhibit C

Its value lies in clear indication of roads, waterways, topography and relationship of land to the river. The areas shaded in green indicate the total land in the license from the ADC to Saiva Siddhanta Church. It also shows the location of the former Aahoaka Ditch which is no longer serviceable.





IX. Photographs of Site

The plantings pictured in the following pages are not part of the current proposal.

Sandalwood Planting, 2013



Looking down at the sandalwood seedling



Swietenia macrophylla, 2005



Swietenia macrophylla, 2009



Freshly planted cuttings of *Pterocarpus*, 2005



Pterocarpus indicus, 2009



Windbreak of *Causarina cunninghamiana*, 2005



Windbreak of *Causarina cunninghamiana*, 2009



Swietenia macrophylla, planted Jan 2013



Acacia Koa 2008



Pterocarpus indicus with *Swietenia macrophylla* and *Causarina cunninghamiana* in background 2008



Palms with *causarina cunninghamiana* windbreak. (Photo 2012)
(Same parcel of land as the proposed project, but on a different section.
These plantings have been grown and maintained by us but they are not associated with
the proposed forestry project.)



X. Monitoring Activities

Because the activities are somewhat complex over the years and timing is important a calendar of intended practices will be created and monitored regularly to assure that plantings and maintenance is on schedule. This will be shared with the Cooperative Resource Management Forester on a yearly bases.

Regard forest health, Dr. Nick Dudley of HARC will be responsible for monitoring the Koa on a regular basis. This will be especially important during the first three years. Once the Koa trees begin to seed, HARC will receive 50% of the seed from the most successful trees.

We will monitor the growth and health of the Mahogany regularly and keep an annual growth record up through the tenth year and every two years thereafter. This will be done by taking standard dbh and height measurements for a sampling of each planting. This information will be shared with the Cooperative Resource Management Forester.

Yearly mowing is effective in eliminating most of the albezia that sprouts up over time, but it also allows us to observe the trees during the mowing and to monitor any changes or problems that may arise.

Appendix A

List of Consultants

Anantha Padmanabha

Dr. H S Anantha Padmanabha, the forestry consultant, is an expert on sandalwood cell biology, who mastered the technology of artificial raising of sandalwood. A scientist of 40 years experience in forestry in India, he had worked as a senior scientist at the Institute of Wood Science and Technology in Bangalore (India) from 1964 to 1998 and was responsible for guiding research projects on sandalwood and other forestry species including but not limited to techniques of growing sandalwood and disease and pests affecting forestry tree species.

Currently he is a Director of Karnataka Research Foundation and Advance Technology Transfer, Bangalore, Consultant to Tropical Forestry Services Western Australia, consultant to Forest Rewards, Western Australia, and had served as consultant to Department of Conservation and Land Development (CALM) and Forest Product Commission (FPC) Government of Western Australia from 1998 to 2002. He is honorary consultant to Karnataka Soaps and Detergents Ltd, Bangalore, assisting and providing guidance to farmers, corporate bodies and NGO's in growing sandalwood in India.

He has co-authored books on sandalwood and have published over 150 publications in both Indian and International journals. He was designated as chief Technical Advisor for sandalwood projects with the World Bank FREE project (ICFRE) Government of India.

For more information, you can view a newspaper article telling of his activities at: <http://www.asiantribune.com/news/2010/05/24/sunday-celebrity-sandalwood-scientist-anantha-padmanabhan-works-royal-tree-restorati>

Nicklos Dudley, M. S.

Academic Qualifications

- M.S., Agronomy (Tropical), University of Hawaii at Manoa, 1990
- B.S., Resource Economics, Michigan State University, 1983

Professional Experience

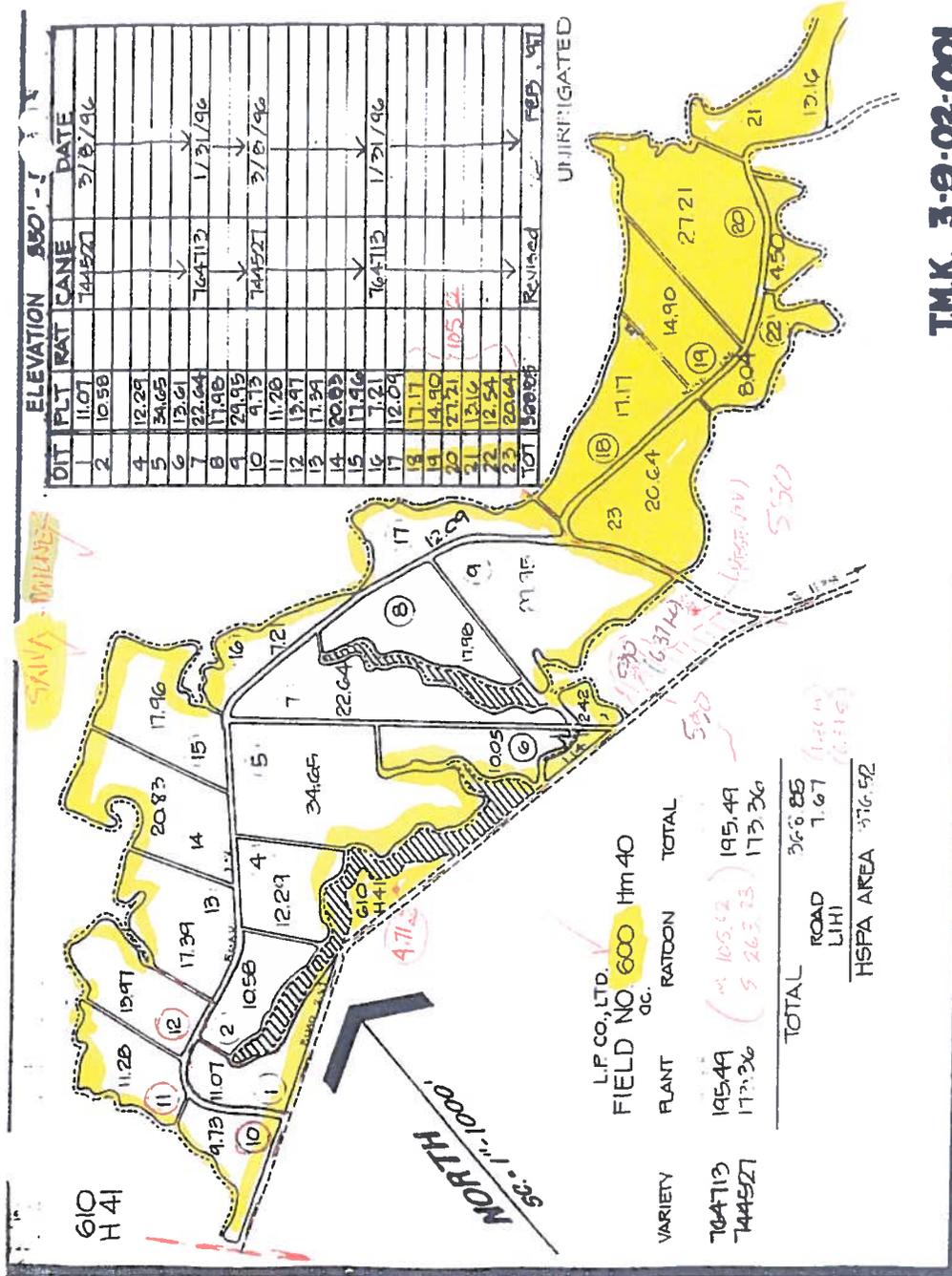
- 2006-Present Forester and Forestry Team Leader & Maunawili Experiment Station Manager, HARC, Maunawili, HI
- 1997-2005 Forester and Forestry Team Leader, HARC, Aiea, HI
- 1994-1997 Asst. Forester, HARC, Aiea, HI
- 1990-1994 Tree Crop Specialist, Hawaii Agriculture Research Center, Aiea, HI

Exhibit C

- 1986-1990 Special Project Assistant, Hawaiian Sugar Planters' Association, Aiea, HI
- 1985-1986 Research Technician, UH, Waimanalo Research Station, Waimanalo, HI
- 1984-1985 Asst. Workshop Coordinator, Nitrogen Fixing Tree Association, Waimanalo, HI
- 1980-1984 Nursery Manager, Dudley Tree Farm, Shaftsbury, MI

Current Research

In Hawaii, Koa (*Acacia koa*) is a valuable tree species economically, ecologically, and culturally. With significant land use change and declines in sugarcane, pineapple, and cattle production, there is an opportunity and keen interest in utilizing native koa in reforestation and restoration efforts. However, moderate to high mortality rates in many of the low-to moderate elevation plantings have impeded past efforts. The primary cause for this mortality, particularly in young plantings, is thought to be koa wilt, caused by *Fusarium oxysporum* f. sp. *koae* (FOXY) (Gardner 1980). *F. oxysporum* is a relatively common agricultural and nursery fungus, but the origin of strains of FOXY virulent to koa in Hawaii is unknown.



T.M.K. 3-9-02-001

Appendix C

Soil Reports

Field	Lab	Date	Organic	Phosphorus			Potassium K	Magnesium Mg	Calcium Ca	pH
				P1	P2	Bicarb				
6-C	CTAHR	6/5/02		15			156	75	706	5.3
11	CTAHR	6/5/02		13			88	64	620	5.6
6-C	Midwest Labs	4/7/03	4.1	7	10		197	107	782	5.3
Subsoil	Midwest Labs	6/10/03	0.9	1	2	3	113	125	1336	7.9
6-C	Midwest Labs	6/10/03	4.9	8	21		198	192	1696	7

Our staff has been in communication with Dr. J. B. Friday of CTAHR regarding the quality of the soil, and we will be taking further soil tests and seeking out recommendations in regard to the best fertilizers to use in the early stages of growth.

Appendix D

Cost Analysis of Case MX 170 Farm Tractor

If they need to rip a field, most farmers on the island will use a dozer, including our neighbor, Green Energy LLC. To get a rough value for useage of our Case MX 170 Tractor (145 rated HP), we looked at two island companies that rent dozers.

Allied Machinery rents a Case 850J dozer with ripper (125 rated HP) for \$80 per hour. (Based upon daily rate)

American Machinery rents a John Deere 750J dozer with ripper (145 rated HP) for 68.75 per hour. (Based upon daily rate)

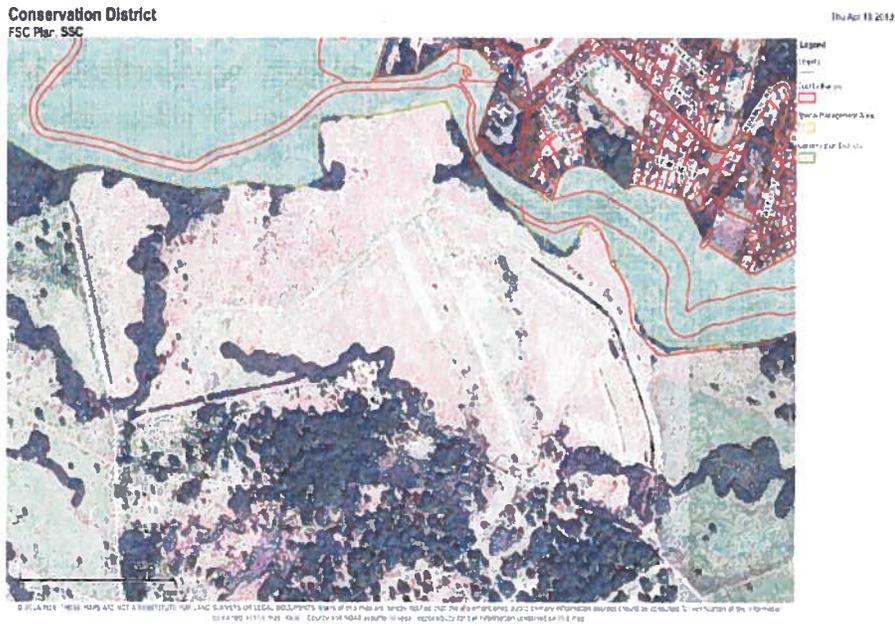
Taking an average of the two gives us \$74 per hour. Add to this operator cost, \$27 per hour, and fuel costs, roughly \$12 per hour. If we ignore delivery and pick up of the equipment and the cost of the additional implements used, this gives us a total value of \$113 per hour. In our calculations we used a conservative \$105 per hour.



Our tractor has a set of five rippers that can rip a total swath eight feet wide and thirty two inches deep. However we will remove the outer two rippers so that we only rip a four to five foot swath. The case also pulls our twelve foot wide harrow and a disc plow with 24 inch discs.

Appendix E

Conservation lands adjacent to Subject property



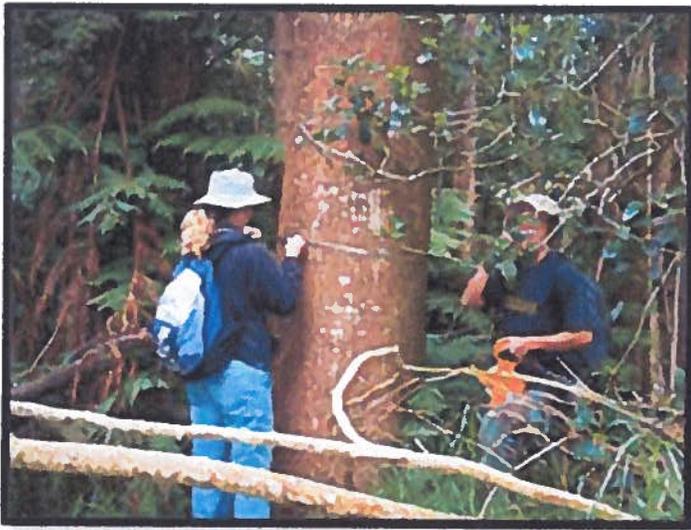
Appendix F

Investing in Koa Forest Plantations Hawaii Forest Industry Association

April 2012

Hawai'i's koa tree (*Acacia koa*) is a much beloved and venerated native tree which grows only in Hawai'i. For centuries Hawaiians have traditionally used the koa tree and its wood extensively to make objects ranging from canoes to personal ornaments. Its exquisite grain and endlessly varying colors make it one of the world's most prized and expensive woods. Unfortunately, much of its native range has been converted to other uses, primarily grazing. The value of high quality koa lumber has created a strong demand for and pressure on the remaining koa forests. Planting koa trees to date has not kept pace with the use of the tree's wood. This webpage is designed to encourage and inform potential planters and investors in koa plantations. Growing koa has numerous risks and pitfalls, however this gorgeous tree with its spectacular wood could be worth the risk if the planter or investor is fully informed.

There is currently strong interest in growing koa both for conservation and utilization. There has been substantial research conducted, which is ongoing, however there has been limited operational experience. The Hawai'i Forest Industry (HFIA) believes that growing koa is both environmentally and culturally the right thing to do and it can make financial sense, if the investor is well-informed on growing practices and very cautious with planting costs.



60-year old merchantable second growth *Acacia koa* tree. Ka'u, Hawai'i Island.



Example of prime mature koa tree, naturally seeded. Note sprawling nature of branches.

Forestry Investment 101

Millions of acres of timberland have been planted by or purchased internationally by Timber Investment Management Organizations (TIMOs) starting around 1980. The investors are primarily pension funds such as Hawai'i State Employee Retirement System and education trusts such as the Harvard Trust. As timber and timberland has become a well-known and accepted investment, and with billions of dollars in play, common methods of valuing these assets have become accepted. The most common metric is to calculate IRR (internal rate of return), which is similar to the interest rate on a bank account or bond. Elements of this calculation are:

- Purchase price of the asset or planting cost of a new plantation;
- Costs to hold or manage;
- Income, normally from tree harvest. Income is the price of standing trees (stumpage) multiplied by volume of logs to be removed. Serious investors rely on current prices and do not speculate on future price changes; and
- The selling price of the asset, if any, at the end of the investment period.

Return on investment is calculated like any other enterprise considering initial cost, cost to maintain, time elapsed, and return at the end.

The University of Hawai'i College of Tropical Agriculture & Human Resources (CTAHR) has

developed an excellent worksheet to input your own estimated variables for a situation or property of interest.⁸ In today's world, investors look for an interest rate around 6%. In strong financial markets rates can climb to 8%. If your calculated rates on a proposed investment vary from this range by much, it is a good idea to check the assumptions.

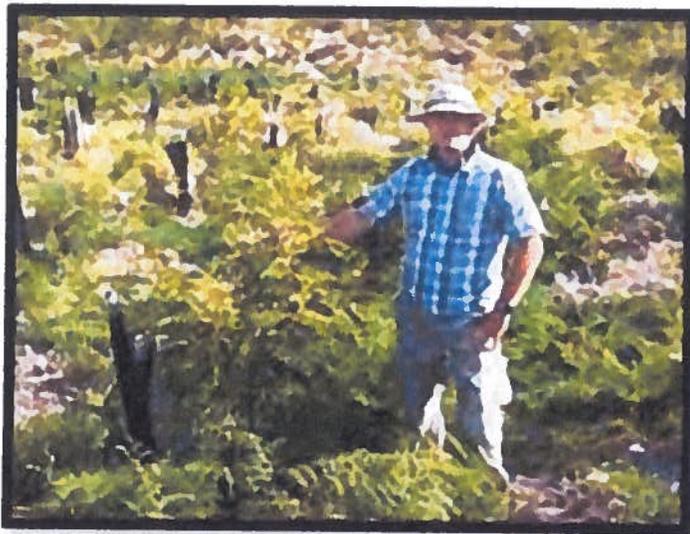
Note: Be careful, be informed. Globally there are bogus forestry investment schemes.⁷

Planting Koa

It is difficult to forecast koa economic planting outcomes because koa has never successfully been grown in a plantation through to successful harvest. However, it appears that with current koa pricing and careful attention to establishment costs, koa plantations can be economically viable.

Spacing

Typically trees are planted about ten feet apart, which will result in 440 trees per acre. Most of these planted trees will not survive to maturity. If a tree is planted 10 feet from the next tree, its branches can only grow out five feet until it is touching the next tree's branches. Koa branches naturally grow much longer than this, giving koa its typical sprawling shape. Most of the planted trees will either die naturally or be crowded out by their neighbors. If this does not happen, they must be pre-commercially thinned by the grower. Otherwise growth will slow dramatically and few of the trees will reach usable size by the target harvest age. Typical growing prescriptions today call for stocking to be reduced to around 70 trees per acre (25 feet between trees) over time, so the remaining trees can grow large enough to be useable.^{2, 4, 5, 6}



One-year-old koa seedling that received fertilization and both pre- and post-planting weed control.

Tree Planting

Koa can be planted in areas cleared of competing brush and grass and free of any grazing animals. If grazing animals are present the trees will almost certainly suffer extensive damage or be killed. Koa appreciates a little fertilizer and is environment specific. Best results are from seed collected in the area

to be planted. When seed cannot be obtained from the intended planting site, the seed source should be from a location with as many of the same characteristics of the intended site as possible. (eg. elevation, soil type, rainfall)

Where to Plant

Koa does best at elevation above 2,500 feet. While all koa are subject to rusts, wilts, and insects, those planted at low elevation are especially vulnerable and complete plantation losses can occur. Koa likes moist soils and climates but can grow (at slower rates) in very rocky soils. Koa trees are intolerant of frost but may survive. 2, 4, 5

Planting and Growing Costs

Friday, Idol, et al.¹⁰ reports costs of \$1,965 per acre (\$4.91 per tree). Forest Solutions, a privately owned forest management group, sets establishment plus maintenance at \$2,300 per acre (\$5.22 per tree) based on their experience. These costs are for planting 400 – 450 trees per acre plus two or three years of maintenance. This cost of establishment does not include fencing, which can substantially increase the cost.

Maintenance Requirements

Planted trees will require one or two weed control treatments plus one or two pre commercial thinnings before maturity.

Pests

The major diseases and pests that affect koa are “[Koa wilt](#),” *Fusarium* SPP, *Xylosandrus* twig borers and the koa moth. Koa does not recover well from physical injury such as broken branches or insect injury to top buds. Losses may include complete plantation mortality and disfiguring trees, resulting in no commercial value for the investment.^{2, 4, 5}



Acacia koa wilt disease. Koa mortality shown most likely caused by vascular wilt fungus *Fusarium oxysporum*.



Acacia koa wilt stain. Typical stain caused by the vascular wilt fungus *Fusarium oxysporum*.

Growth Rates and Time to Maturity

Measured growth rates of young natural stands and plantations are showing rates in maturing trees in the range of 150 to 250 board feet per acre per year. Forest land management should increase these “wild” yields, however but no data is available on such stands. Consensus between academics, forestry agency specialists and commercial foresters is that it is possible that there might be commercial use for koa trees as young as 35 years. The uncertainty stems from the fact that no plantation-grown koa trees have been grown to commercial maturity at this time. To test this hypothesis, the US Forest Service Forest Products Lab, University of Hawai`i, and Hawai`i Forest Industry Association, with considerable contributions of time and equipment by saw miller Jay Warner, did a thorough [technical analysis of lumber yields](#) from logs harvested from four stands ranging in age between 31 and 36 in February of 2012. Results are not yet published, but three wood quality observations were made during the test:

- There is a high portion of unusable or very low value “sapwood” on the outside of the logs. This wood is white, turning to dull yellow with brown flecks with aging. It is not recognizable as koa wood without a technical examination. There is no market currently for this wood.
- The logs yield some classic “koa look” lumber.
- Much of the lumber was an un-figured, un-distinctive brown color and included stain and other defects. There is no consensus yet on the market value of this type of wood.

Results should be published soon and will be posted on this page.

There is wide agreement among forestry professionals that a harvest age of between 45 -50 years should be achievable.^{1, 2, 3, 4, 5}

Naturally seeded stands of koa can also do very well. The seed lives in the soil for long periods of time. Natural stands need soil disturbance so the trees can grow past grass and other competitors. Protection from grazing animals is also necessary. Natural stands often emerge very thick and can benefit from thinning and fertilization.



A natural stand of thirty-year old Acacia koa. Kona, Hawai'i.



Acacia koa tree in a fifteen-year old natural stand. Kapapala, Ka'u, Hawai'i.

Genetic Variability

Koa has highly variable genetics. Genetics can have great impact on wood quality, but is not yet well understood. Over time, genetics will be better understood and will present an opportunity for wood quality improvement.

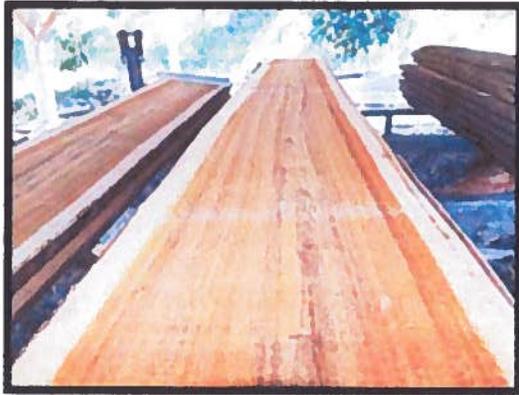


Two fifteen-year old trees with very different colors of heart-wood.

Marketing the Crop

Value of Harvested Trees – Example

If typical plantation harvest ages settle out around age 45, this might yield gross volume of 9,000 board feet per acre (200 board feet per acre per year) before deductions for defect or sapwood. There is no reliable data for such deductions.



Thirty-year old Acacia koa wood from Kona, Hawai`i Island. Note unusable white sapwood and heart stain.

Current stumpage rates for mature koa are in the \$4 per board foot range. No one knows whether the market will accept second growth lumber at the current price for the mature koa. Using an optimistic assumption that second growth trees will garner today's prices for the older koa, then net stumpage in this example would be \$36,000 per acre--\$82 for each of our originally planted 440 trees per acre or around \$514 for each of the remaining crop trees. Poor form (eg. branchiness and multiple stems) limits the amount of volume that can be economically harvested from koa stands.¹¹

An alternative strategy would be to make modest harvests periodically and allow some trees to grow larger and older. A harvest of 1,000 board feet per acre once every five years starting at about age 35 would be sustainable, yielding perhaps \$4,000 per acre once every five years.^{1, 5}

Utilize the CTAHR calculator to use any assumption you care to make and find the economic yield.⁸ An example of current economics using one possible set of assumptions is located here:

EXAMPLE KOA ECONOMICS

Subsidies

There are several attractive subsidy programs.¹ The National Academy of Science in a report authored by representatives of Stanford, University of Hawai`i and Harvard indicates that a koa plantation without subsidies would be worth a net present value of \$453 per acre, while with subsidies it could be worth \$1,661 per acre. Incentive Programs for forest landowners in Hawaii can also be found [here](#).

Ongoing Research

There are several organizations currently researching Acacia koa, including the University Of Hawai`i College Of Tropical Agriculture and Human Resources, the US Forest Service and the Tropical Hardwood Tree Improvement and Regeneration Center. Anyone interested in Hawai`i forestry as an investment should follow the efforts of these and other scientific organizations.

Mahalo for your research and insights!

[University of Hawai`i, College of Tropical Agriculture and Human Resources \(CTAHR\)](#)

[U.S. Department of Agriculture](#)

[U.S. Forest Service](#)

[Purdue College of Agriculture](#)

[Hawai`i State Department of Land & Natural Resources](#)

[Hawai`i State Division of Forestry and Wildlife \(DOFAW\)](#)

[Institute of Pacific Island Forestry](#)

[Stanford University](#)

**Harvard University
Forest Solutions, Inc.
Tropical Hardwood Tree Improvement and Regeneration Center**

FOOTNOTES

1 - Koa Forestry as a Case Study

Joshua H. Goldstein, Stanford University; Gretchen C. Daily, Stanford University; James B. Friday, University of Hawai'i, CTAHR; Pamela A. Matson, Stanford University; Rosamond L. Naylor, Stanford University; Peter Vitousek, Stanford University; William C. Clark, Harvard University
<http://www.pnas.org/content/103/26/10140.full?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Hawai'i+forestry&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT>

2 - Species Profiles for Pacific Island Agroforestry – Acacia Koa

Craig R. Elevitch, Kim W. Wilkinson, James B. Friday, University of Hawai'i, CTAHR

3 - Hawai'i Growth Plot Data

Michael Constantinides, Hawai'i Department of Land & Natural Resources

4 - Farm and Forestry Production and Marketing Profile – Koa

James B. Friday, University of Hawai'i, CTAHR

5 - Koa (Acacia koa) Ecology and Silviculture (PSW GTR 211)

Patrick J. Baker, US Department of Agriculture; Paul G. Scowcroft, Institute of Pacific Island Forestry; John J. Ewel, Institute of Pacific Island Forestry

6 - Potential for Koa improvement in Hawai'i

Nick Koch, Forest Solutions; Purdue College of Agriculture

7 - Problematic Forestry Schemes

http://www.panamaforestry.com/GTI_Teak_information/Teak_Plantation_investment_controversies.htm

<http://www.guaduabamboo.com/bamboo-investment-scams.html>

8 - Financial Analysis for Tree Farmers in Hawai'i

J. B. Friday, University of Hawai'i, CTAHR; Carol Cabal, University of Hawai'i, CTAHR; John Yanagida, University of Hawai'i, CTAHR

http://www2.ctahr.Hawai'i.edu/oc/freepubs/spreads/RM-9_forest_econ_calc.xls

9 - Acacia koa Photo Gallery

J.B. Friday, University of Hawai'i, CTAHR

10 - The Value of Managing Acacia Koa Forests

Idol, T., P. G. Scowcroft, N. Dudley, P. Simmons, K. Dancil, and J. B. Friday. 2007. Hawai'i Forest Journal, Hawai'i Forest Institute, Hilo, HI.

11 - Poor Stem Form as a Potential Limitation to Private Investment in Koa Plantation Forestry in Hawaii

Scowcroft, PG, JB Friday, J Haraguchi, TW Idol, NS Dudley. 2010. doi: 10.1007/s11842-009-9107-1
[References for further reading on Koa from CTAHR](#)

Appendix G

Summary of Acacia Koa Research by the Hawaii Agriculture Research Center, taken from their internet site.

Acacia koa Research



Acacia koa is a Hawaiian endemic hardwood species highly prized for its quality as a craft and furniture-making wood. The natural range of *Acacia koa* has been greatly reduced owing to logging and land clearing for agricultural production and cattle grazing. Presently, the demand for *Acacia koa* wood may exceed the sustainable supply. This has resulted in shortages and significant increases in price.

Since 1994, over 200 families of *Acacia koa* have been grown at the Hawaii Agriculture Research Center (HARC) Maunawili Substation in cooperation with Dr. James L. Brewbaker of the University of Hawaii. Another koa evaluation site is maintained at the University's Hamakua Research Station on Hawaii island (elevation 1900 feet). These koa plantings and others on Maui and Oahu represent well-mapped collections from six Hawaiian islands. Wide genetic variation exists in the rate of growth and tree form, with a large number of families that are strongly arboreal, erect and with limited lateral branching.

The primary objectives for evaluating koa seed sources are to record the variation in tree growth and form between koa families from diverse collection sites, identify quality seed sources for reforestation, and select the best trees and seed sources for further testing. The plots are also maintained for subsequent silvicultural management tests

It is desirable to identify a low elevation koa which is resistant to the pests encountered at that level. Coffee twig borer attack of the koa trials at Maunawili Substation is a serious problem. The borer is not a problem at the koa progeny trials at Hamakua Research Station.

Currently, there are few recommended silvicultural practices established for the management of *Acacia koa*. When elite seedlings are combined with correct establishment and maintenance practices, the highest yield potential is realized. The cooperative trials seek to determine the type and amount of silvicultural practices required to establish the koa plantings; maintain high rates of growth; and ensure high quality timber.

Koa is a self-incompatible species. Methods are being developed to test the koa breeding system which will help us design a breeding plan for *Acacia koa*. The work is expected to lead to the development of well adapted low elevation koa progeny which are tolerant to borer insects and fungus disease.

Works Cited

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte, 2012: *Online Rainfall Atlas of Hawai'i*. Bull. Amer. Meteor. Soc., doi: 10.1175/BAMS-D-11-00228.1 "<http://rainfall.geography.hawaii.edu/>"

Newton, J. E. Mayhew and A. C. *The Silviculture of Mahogany*. Edinburgh: CABI Publishing, 1998.

NRCS, Field Office Technical Guide for Hawaii Website, *Forestry Area Planting Practices Jobsheet*, April 2013 "<http://efotg.sc.egov.usda.gov/treemenuFS.aspx>"

USDA, NRCS *Custom Soil Resource Report for Island of Kauai*, Hawaii NCRS website "<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>"

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July 15, 2013

DECLARATION OF EXEMPTION

From the preparation of an environmental assessment under the authority of
Chapter 343, HRS and Chapter 11-200-8, HAR

According to Section 11-200-8, Hawaii Administrative Rules, the Agribusiness Development Corporation (ADC) may declare exemption to the following types of action from the requirement to prepare an environmental assessment:

Project Title: Saiva Siddhanta Forestry Project

Project Number: N/A

Project Description: Planting, maintaining and eventually harvesting a minimum of 80 acres of hardwood on former cane land.

This project will include, but not limited to: Planting windbreaks, stands of hardwoods, experimental low altitude Koa seed farm, and experimental plantings of native Hawaiian sandalwoods

Consulted Parties: Forestry Stewardship Program Staff and Committee; Dr. J. B. Friday, CTAHR; Ananth Padmanaba, Independent Sandalwood Consultant; Nicholas Dudley, HARC.

According to Section 11-200-8, Hawaii Administrative Rules, the Agribusiness Development Corporation (ADC) may declare exemption to the following types of action from the requirement to prepare an environmental assessment:

Exemption Class 1:

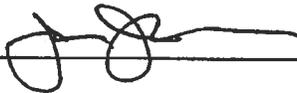
Exempt Item Description:

Class 1: Operations, repairs or maintenance of existing structures, facilities, equipment, or topographic features, involving negligible or no expansion or change of use beyond that previous existing.

Date of Agency Exemption List: November 12, 2003

I have considered the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200-8, HAR. I declare that this project will probably have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.

**Signature of Director
Or delegate:** _____

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke, positioned over a solid horizontal line.

Date: July 15, 2013

**Original: Agency file
Copy: Project file**