




**TIST**  
The International Small group  
Tree planting programme

Accelerating growth of a successful pro-poor carbon offsetting small group tree planting programme in Africa

**CLEAN AIR ACTION CORPORATION** develops and implements low cost strategies to clean up the air in ways that make good business sense

**EfD** Enterprise for Development (EfD) working in partnership with CAAC/ TIST

### Responding effectively to the climate change challenge

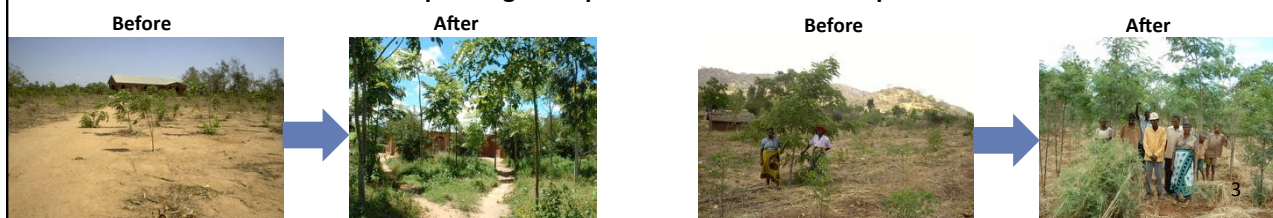
- Tree planting is one of the simplest and most cost effective means of mitigating climate change, by absorbing CO<sub>2</sub> from the atmosphere
- Tree planting on degraded land absorbs carbon from the atmosphere and generates significant improvements to the livelihoods of smallholder farmers
- TIST supports tree planting on degraded/unused land in low income countries by and for the benefit of smallholder farmers
- Restoring existing degraded land is a highly effective climate change opportunity



## What does TIST do?

- TIST encourages small groups of smallholder farmers to improve their farms by planting and maintaining trees on degraded and/or unused land
- Already, >78,000 members in 4 countries have planted >16 million trees and captured >3.2 million tonnes of carbon to date, and will capture an additional 13 million tonnes
- As the trees grow, carbon captured is quantified and verified and certified greenhouse gas credits are sold in the global carbon market
- TIST pays the smallholder farmers small annual payments per tree established and 70% of the net profit received when credits are sold
- Smallholder farmers also derive significant non-carbon related benefits (described later)

### Tree planting has a positive environmental impact



## The small group tree planting programme

- Farmers are mobilised by other TIST farmers and join small groups of 6-12 people that form clusters of up to 500 local farmers. Clusters act as a mechanism to organise the small groups of women and men
- Farmers decide whether, where and how to plant trees, source and own the seeds and keep ownership of the trees and land
- Trees are typically planted on degraded and/or unused land (e.g. around houses for shade, in small wood lots for firewood, along boundaries as windbreaks, along streams for flood and soil control)
- Participants are contracted to maintain the tree groves for 60 years in return for small annual payments per tree planted, and entitlement to a share of the net profit from carbon credit sales. Significant non-carbon benefits are also realised in the form of farm improvements
- After 5 years of tree growth, tree mass and the volume of carbon stored in the trees can be calculated, the carbon captured is verified to international standards, and carbon credits can be offered for sale
- Carbon credits do not have to be monetised immediately, but can be retained and sold at a later date



## Verifying the carbon reductions

- TIST is recognised as a leading carbon offsetting programme and has developed an award-winning monitoring system, using third-party verified standards to ensure carbon emission reductions are real and additional
- TIST has sold carbon offsets to a number of large and multinational corporations through resellers and bilateral agreements with end-purchasers
  - Purchasers have included BP, DHL, Freshfields, Grundon, Hyundai, Marks & Spencer, Microsoft, Tata
- Strong verification mechanisms and the demonstrably pro-poor nature of the programme enables TIST to market and sell the carbon credits at significant premium over the voluntary offset market price

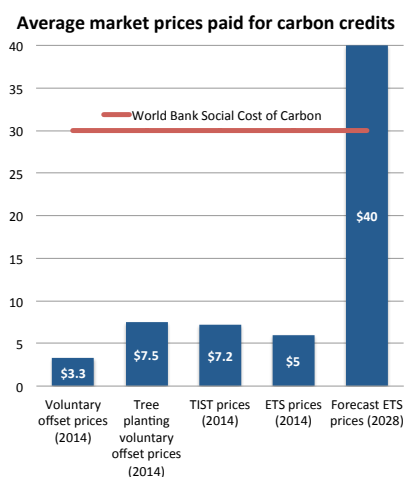
TIST is the world's first dually validated and verified carbon offsetting programme (by VCS (Verified Carbon Standard) and CCB (Climate, Community and Biodiversity Standards)).

Voted Best Offsetting Project 2013 and 2015 (runner-up in 2014) and Best Project Developer (forestry and land use) 2015 (Environmental Finance)

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## The value of carbon credits

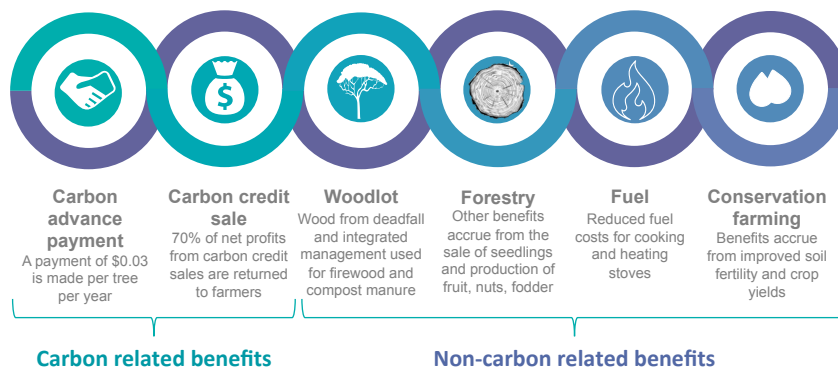
- Companies, governments and individuals purchased 84 MtCO<sub>2e</sub> in forest-based emissions reductions through voluntary carbon markets in 2015, at a total value of \$278m
- The voluntary market price for carbon is weak (\$3.30 in 2014; avg of \$4.60 between 2007 and 2014) due to the marketplace and a lack of policy consistency
- TIST has been able to consistently sell credits at premium prices (\$7.2 in 2014), in line with other tree planting voluntary offsets
- The value to the global community is much higher than the market price (World Bank estimate \$30)
- Analysts forecast much higher carbon market prices following COP21 and Market Stability Reserve agreements (EU ETS prices are forecast to rise to \$40 by 2028), with voluntary market prices tracking mandatory market prices



TIST is sustainable and generates significant small farmer benefits even at current low carbon prices

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## TIST carbon and non-carbon benefits for small farmers



- Although the upfront carbon payments are small it is clear that large numbers of poor small farmers have volunteered to plant large numbers of trees at their own cost because they value the short term non-carbon benefits as well as the potential for a share of deferred carbon payments
- Pro-poor benefits independently evaluated "TIST provides exceptional community benefits to their members...[and] women receive 92% of the average benefits"
- Average benefit over the programme life cycle estimated at \$140-170 p.a., depending on the carbon price, of which circa 50% are non-carbon benefits
- Given that the vast majority (circa 85%) of TIST participants earn less than \$2 a day, these benefits represent a significant boost to their incomes
- The benefits to the global community are much greater than this, because the social value of absorbing carbon from the atmosphere is likely to remain much higher than the market price

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## TIST governance

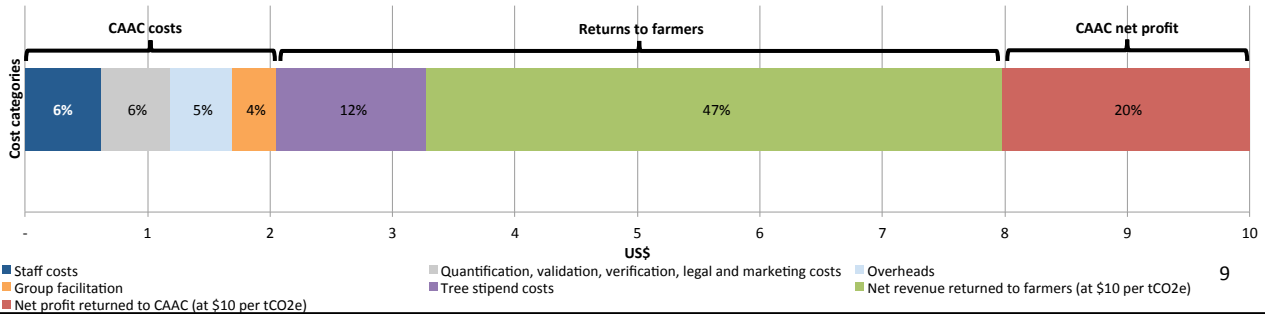
- TIST was established by Clean Air Action Corporation (CAAC), a US pollution reduction, climate change mitigation and adaptation company
- The Institute for Environmental Innovation (I4EI), a 501(c)3 US public charity, provides a mechanism for US taxpayers to make tax-deductible donations to TIST, and donors to provide grant finance
- CAAC provides the operational management through local offices and local farmers, with proven success records
- Payments to the TIST small groups are made as per the signed contract, often using a mobile money transfer (e.g. mPESA)
- Payment amount is based on quantified tree stock held by the group. Each small group determines the group's use of funds and/or disbursement to individual farmers

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## TIST costs

- TIST is able to operate sustainably even at very low carbon market prices because it's costs are very low
- The farmers themselves acquire seeds, plant the seedlings and maintain the trees. The only up front cost to CAAC is in the mobilisation, training and facilitation of the small groups, initial verification costs, and the annual payment of 3 cents per tree to the small groups when the trees are established
- CAAC costs are limited to international and country office staff (salary and travel), administrative and technology support, group facilitation, verification and certification, and marketing and credit sale costs
- Consequently, over the period 2012 to 2046 when TIST will already expand from 12m to 28m trees and capture an additional 10m tCO<sub>2</sub>e, CAAC's costs are estimated to amount to \$2.05/tCO<sub>2</sub>e absorbed, and \$2.48/tree planted

TIST's costs, farmer returns and net profits are broken down as follows, assuming a sale price of \$10 per tCO<sub>2</sub>e



## What is special about TIST?



### Self-reliance and ownership

Small farmers participate voluntarily because they see and value the benefits, and are willing to incur effort and costs upfront despite the small front-end payments. They also retain ownership of the improved properties throughout



### Pro-poor benefits

TIST participants are paid a small advance on the carbon stored in their trees, and receive 70% of net profits from carbon credit sales, alongside significant additional non-carbon benefits. If the carbon market rises (as is widely expected), the benefits to the small farmers increase as the cost per tonne of carbon produced remains the same



### Environmentally and climate friendly

Large environmental benefits are accrued through improved biodiversity and soil quality, as well as much greater social benefits of carbon absorption than are priced into the carbon credits



### Sustainable and low cost

TIST is financially sustainable even at the current low carbon price, primarily because TIST's costs are low as small farmers volunteer to acquire and plant the trees at their own cost



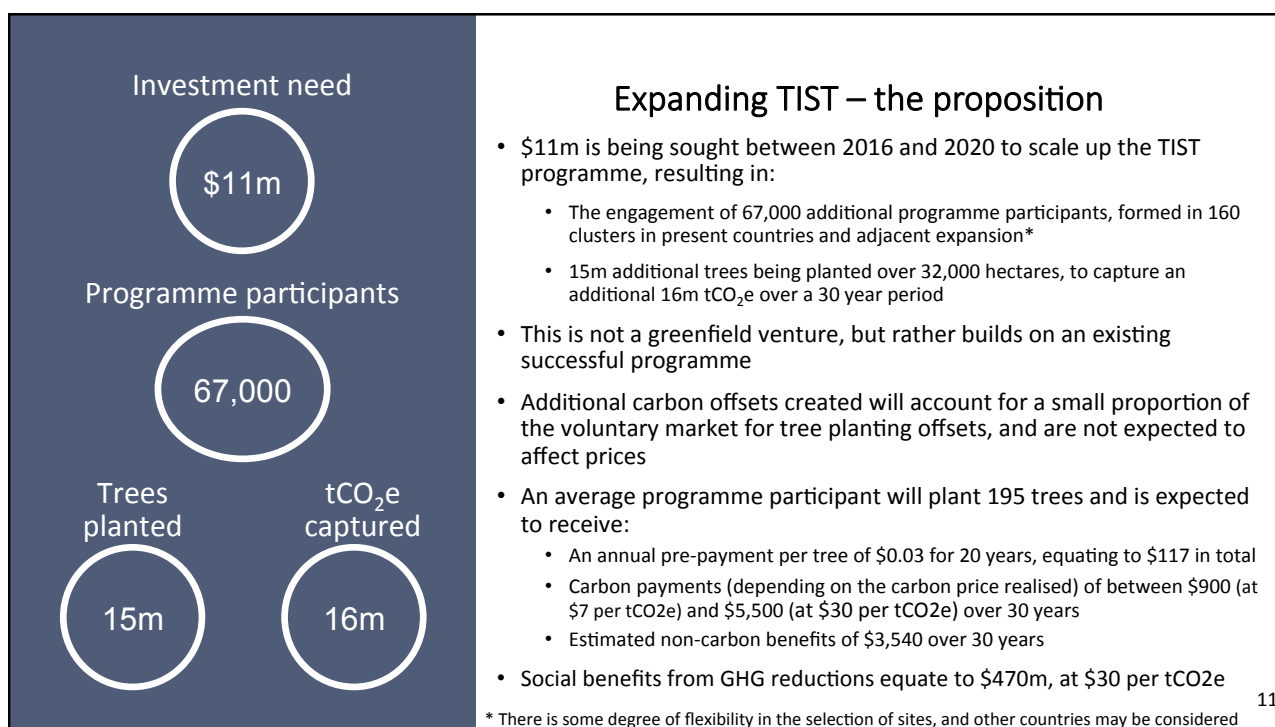
### Successful and award winning

TIST is not a greenfield project, it is a demonstrable success - over 75,000 members in 4 countries have planted over 16 million trees demonstrating enthusiastic participation by small farmers. TIST's model has been widely recognised and acclaimed



### Scalable

The programme is highly scalable, hence the expansion project described here



## Expanding TIST – the business model

- The existing TIST business model will remain unchanged but strengthening of governance and operational capacity is planned in some areas
- CAAC's costs will amount to \$3.17/tCO<sub>2</sub>e absorbed, and \$4.20/tree planted
- Projections assume a small carbon price increase to \$10 per tCO<sub>2</sub>e over monetisation period, offering a sustainable and profitable business model and significant additional benefits for small farmers if carbon prices increase further (as projected)

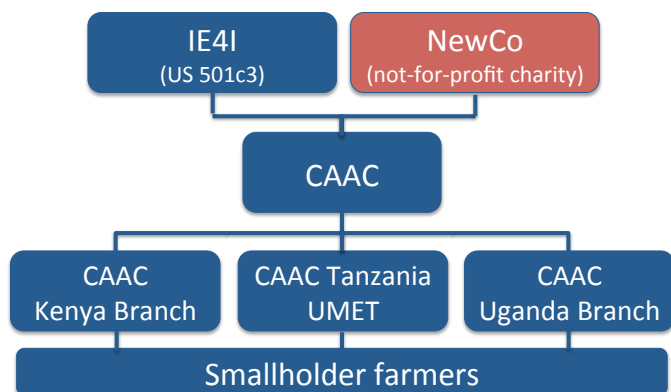
Between 2017 and 2046, at a market price of \$10 per tCO<sub>2</sub>e, CAAC will generate:

- A net cash gain in excess of \$80m
- Aggregate carbon benefits to farmers of \$245m
- Aggregate non-carbon benefits to farmers of \$500m
- Social benefits in excess of \$1.2bn

- The model is however sustainable even at current low carbon market prices

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## Expansion of the TIST structure



- A new company limited by guarantee with charitable status (NewCo) is proposed
- NewCo will be accountable to funders via contracts with CAAC for the agreed scope of work
- CAAC will be accountable to funders via NewCo, and to farmers through contracted arrangements in line with existing TIST processes

- Non-US funding will be channelled to CAAC via NewCo subject to contract for TIST programme expansion
- Relationship between CAAC and small farmers will be the same as the existing TIST programme

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## Funding the expansion

Type of funding	Pros and cons
Grant funding	<ul style="list-style-type: none"> <li>• Demonstrates immediate support for pro-poor climate-sensitive programme</li> <li>• Maximises benefits to small farmers (through increased net profits shared with them)</li> <li>• Increases reinvestment funds available to further grow TIST</li> </ul>
Pre-purchase of carbon credits (in effect 0% loans repayable when carbon credits monetised)	<ul style="list-style-type: none"> <li>• Demonstrates immediate support for pro-poor climate-sensitive programme</li> <li>• May reduce benefits to small farmers if pre-purchase price is below potential future net price</li> </ul>
Long term (10-12 yrs) low interest (3-5%) loans	<ul style="list-style-type: none"> <li>• Demonstrates immediate support for pro-poor climate-sensitive programme</li> <li>• Reduction in benefits to small farmers (as net profits shared with farmers are net of interest and principal repayments)</li> <li>• Reduction in funds available for reinvestment to further grow TIST</li> </ul>

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## Key risks and risk management

Type of funding	Risk assessment	Risk management
Small farmer performance	Low/Medium	Existing TIST programme history demonstrates good farmer performance planting and maintaining trees
Cost control	Low	Most of farmer costs are incurred themselves TIST incremental costs are low and managed
CAAC performance risk	Low/Medium	High key persons risk to be mitigated by hiring younger expertise in-house
Validation/ monetisation of credits	Low	TIST has demonstrated excellence in this area
Carbon credit price risk	Medium/High	Carbon market price risk is high but base case is sustainable even at the current low price. Price risk can be mitigated through funding options outlined earlier.

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## Who and why to support TIST...

TIST offers a sustainable and scalable model to improve the livelihoods of subsistence farmers, while improving biodiversity and reversing the effects of deforestation

### Who supports TIST

- Consumer businesses
- Producer businesses
- Financial services businesses
- Professional services businesses
- Social investment funds
- Philanthropists

### Why support TIST



#### Investment

Increased incomes means farmers can invest in improved inputs



#### Soil quality

Improving soil quality can lead to improved farmer productivity



#### Drought and flood resilience

Trees reduce air and soil temperature, and soil moisture loss. Trees also protect crops from heavy rains and reduce soil being washed away



#### Water

Trees provide a natural water filtration process and improve water quality



#### Biodiversity

Tree groves create a local microclimate by providing buffers, corridors and stepping-stones in the landscape

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## Additional information 1

### Small group tree planting programme governance

- TIST's success is based on country leadership. Farmers are introduced to TIST by other TIST farmers and organised into small groups of 6-12 people that form a cluster of up to 500 local farmers with elected leadership positions that include women and men
- The cluster meets monthly, and acts as a platform for networking, trading and sharing experiences among peers, as well as a mechanism to distribute information/materials to programme participants and collect tree data for calculating carbon
- CAAC enters into a contract with each small group to maintain the tree groves for 60 years in return for the agreed carbon benefits, and associated non-carbon benefits. CAAC is contracted to provide the programme structures, provide programme updates to participants, and undertake trainings, monitoring and marketing of credits
- Funds for farmer stipends and carbon revenues flow from I4EI or CAAC to the small groups
- CAAC disburses funds to the small groups, as per signed contract, often using a mobile money transfer (e.g. mPESA)
- Payment amount is based on quantified tree stock held by the group and profit sharing
- Small groups oversee group use of funds, and/ or disbursement to individual farmers

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## Additional information 2

### Process of verification

TIST's award-winning monitoring system and 3rd party verified standards involve:



#### Feasibility assessment

An assessment of project assumptions, feasibility and risks is conducted



#### Baseline assessment & validation

Trained quantifiers record baseline data and measure existing tree mass



#### Quantification

Current tree mass data is used to calculate CO<sub>2</sub> stored in the trees annually. This translates into a carbon value (less any credits previously claimed on the tree)



#### Verification

After project implementation and monitoring, a separate 3<sup>rd</sup> party auditor assesses the delivery of GHG mitigation



#### Eligible offsets offered for sale

Offset project registries issue each tonne of emissions reduction under a unique code that can be transacted

### Marketing of the carbon credits

TIST has sold carbon offsets to a number of large and multinational corporations, and through negotiations with end-purchasers and brokers



#### Brokers and resellers

TIST has sold the majority of carbon offsets through a respected reseller, Natural Capital Partners



#### End buyer sales

TIST has also managed the sale of carbon offsets to end buyers directly



#### Pre-payment agreements

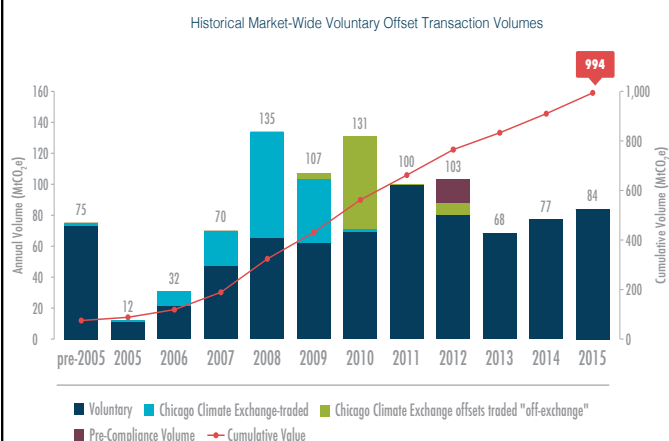
Eight private sector corporations have entered into long-term pre-payment agreements for future carbon credits

TIST's clients have included Apollo Tyres, BP, DHL, Freshfields, Grundon, Hyundai, Marks & Spencer, Microsoft and Tata

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### Additional information 3

#### Market for forestry carbon credits



- Companies, governments and individuals purchased 84 MtCO<sub>2</sub>e in forest-based emissions reductions through voluntary carbon markets in 2015, at a value of \$278m
- While market value increased over 2014, the average price per tCO<sub>2</sub>e declined to \$3.30
- The avg price per tCO<sub>2</sub>e between 2007-14 was \$4.60
- The social value per tCO<sub>2</sub>e is significantly higher (~\$30)
- There is however significant optimism on future demand for voluntary offsets following:
  - The landmark COP21 agreement to reduce GHG emissions
  - Agreement on the Market Stability Reserve to remove surplus emission allowances from EU ETS
  - The inclusion of climate change into the UN's SDGs
  - Analysts predict voluntary market prices will track mandatory market prices, such as the EU ETS, where prices are forecasted to rise to \$40 by 2028

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### Additional information 4

#### Expected benefits to programme participants

Independent reports “highlight how TIST provides exceptional community benefits [and has a] highly positive net benefit to the participants and community”

Benefit	Original Survey	Yale/NEC Survey
Received a carbon stipend	34%. Average KES 296	69%. Average KES 1,069
Sold their own home-grown firewood or fruits/nuts	19%. Average KES 4,814	70%. Average KES 25,992
Used/consumed their own home-grown fire wood or fruits/nuts	52%. Average KES 6,528	43%. Average KES 18,652
Harvested and used their own home-grown fodder	25%. Average KES 11,796	66%. Average KES 67,482
Trained in Conservation Farming (CF) practices.	69%.	97%.
Used CF practices and increase value of crop yield	49%. Average KES 12,150	82%. Average KES 7,483
Produced compost manure	29%. Average KES 6,913	54%. Average KES 6,366
Began keeping bees	19%. Average KES 1,040	26%. Average KES 1,134
Raised seedlings for sale or their own use	14%. Average KES 3,197	33%. Average KES 7,241

Results show that “vulnerable households experienced a range of benefits from sales and savings. Notably, incremental livestock and their products and harvesting tree products such as fruit, nuts, fodder and firewood .... with the new survey showing it [has a] higher value than the cash payments”

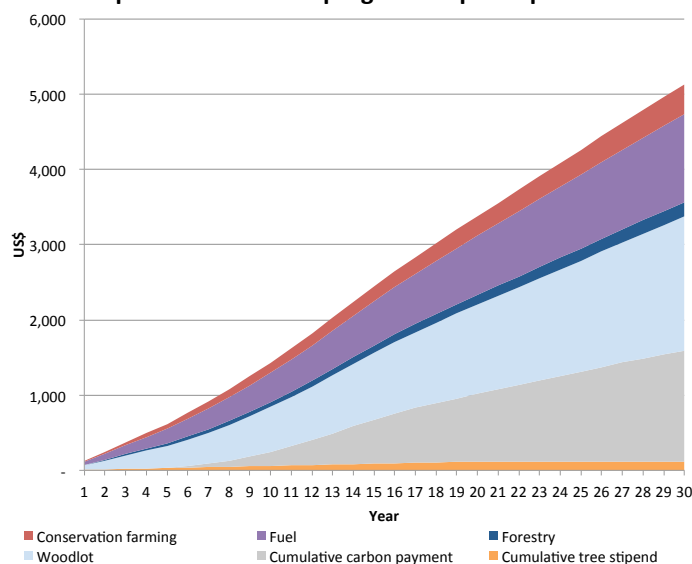
“The Yale/NEC Survey showed that women receive 92% of the average benefits...and attended more cluster meetings and received more training than men”

\* Data and quotes excerpted from the Project Implementation Report prepared and verified for the Climate, Community and Biodiversity Standard gold level survey. The original survey was done in 2011. The Yale/New England College (NEC) survey was conducted in 2015.

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## Additional information 4

### Expected benefits to programme participants



An average programme participant will plant 195 trees and is expected to receive:

- An annual pre-payment per tree of \$0.03 for 20 years, equating to \$117 in total
- A cumulative carbon payment (depending on the carbon price realised) of between \$900 (at \$7 per tCO<sub>2</sub>e) and \$5,500 (at \$30 per tCO<sub>2</sub>e)\*
- Total cumulative other non-carbon benefits equating to \$3,540\*\*. This includes:
  - Woodlot from deadfall and integrated management used for firewood and compost manure (\$1,778)
  - Forestry, including from the sale/consumption of seedlings and production of fruit, nuts and fodder (\$191)
  - Reduced stove fuel costs (\$1,176)
  - Conservation farming in terms of improved soil fertility and crop yields (\$395)

This equates to an average annual benefit of over \$170 per programme participant

\* Chart depicts a constant carbon price realised of \$10 per tCO<sub>2</sub>e  
 \*\* Based on independent evidence from TIST programme

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## Additional information 5

### Terms of agreement between CAAC and small groups

- CAAC enters into a contract with each small group to maintain the tree groves for 60 years in return for the agreed carbon benefits, and associated non-carbon benefits
- The participants and/or small group own the land (or have rights to plant trees), the trees, and the fruits, nuts, medicines and all other products from the trees and any crops from sustainable agriculture practices
- The small groups agree to plant a minimum number of trees per year for at least 5 years; raise the trees to maturity; and replant trees that die, for any reason, each year for the next 20 years
- CAAC agrees to provide the programme structures, provide programme updates to participants, and undertake trainings, monitoring and marketing of carbon credits
- CAAC pay the small group 70% of the net value of the GhG credits made by the small group annually.\* For the first 20 years of the contract, CAAC pre-pays the small group \$0.03 per year for each live tree
- The remaining 30% of the net value of the GhG credits is retained by CAAC to cover other business costs (e.g. for expansion to other sites) and may be used for other corporate purposes

\* The payment is based on cumulative revenues, less direct costs associated with program operations (e.g. administration, quantification, verification, marketing of credits)

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### Additional information 6

#### CAAC historical financial performance

P&L (USD)	Sep-12	Sep-13	Sep-14	Sep-15	7 Months
Revenue	282,846	1,332,962	1,463,057	1,553,475	506,970
<b>Revenue growth</b>	<b>371%</b>	<b>10%</b>	<b>6%</b>	<b>-67%</b>	
COGs	(88,912)	(217,834)	(722,379)	(707,375)	-
<b>Gross Profit/Loss</b>	<b>193,934</b>	<b>1,115,128</b>	<b>740,678</b>	<b>846,100</b>	<b>506,970</b>
<b>Gross Margins</b>	<b>84%</b>	<b>51%</b>	<b>54%</b>	<b>100%</b>	
Other Income	2,060,757	98,427	5,031	-	-
Overheads	(2,421,106)	(1,889,620)	(622,483)	(627,236)	(542,652)
<b>Overhead/Turnover</b>	<b>856%</b>	<b>142%</b>	<b>43%</b>	<b>40%</b>	<b>107%</b>
EBIT	(166,415)	(676,065)	123,226	218,864	(35,682)
Financing Costs	-	-	-	-	-
PBT	(166,415)	(676,065)	123,226	218,864	(35,682)
Income Tax	-	-	-	-	-
<b>PAT</b>	<b>(166,415)</b>	<b>(676,064)</b>	<b>123,227</b>	<b>218,865</b>	<b>(35,681)</b>

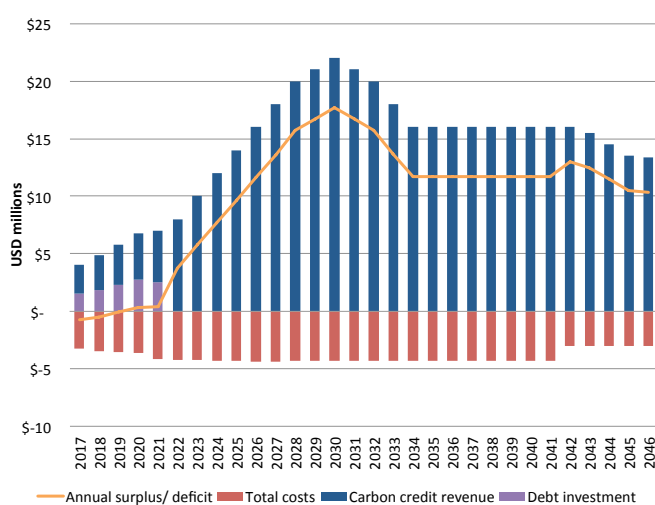
Balance Sheet (USD)	Sep-12	Sep-13	Sep-14	Sep-15	7 Months
<b>Current Assets</b>					
Accounts Receivables	492,252	0	0	247,789	8,594
Prepayments & Deposits	3,059	2,464	0	5,521	247,789
Cash	110,984	49,468	25,029	300,206	222,011
<b>Total Current Assets</b>	<b>606,295</b>	<b>51,932</b>	<b>25,029</b>	<b>553,516</b>	<b>478,394</b>
<b>Non-Current Assets</b>					
PPE	8,282	3,895	1,027	0	0
Verified Emissions Reduction	0	0	815,130	497,169	497,169
WIP - Credit Development	0	0	584,963	736,460	736,460
TIST Program - net of accumulated amortisation	1,956,062	1,778,238	494,942	369,558	369,558
	<b>1,964,344</b>	<b>1,782,133</b>	<b>1,896,062</b>	<b>1,603,187</b>	<b>1,603,187</b>
<b>Total Assets</b>	<b>2,570,639</b>	<b>1,834,065</b>	<b>1,921,091</b>	<b>2,156,703</b>	<b>2,081,581</b>
<b>Current Liabilities</b>					
Accrued Liabilities	316,260	197,670	167,647	151,681	152,241
Notes Payable - officers	202,772	260,853	254,676	185,570	145,570
Payables to C4F2	0	0	0	101,820	101,820
<b>Total Current Liabilities</b>	<b>519,032</b>	<b>458,523</b>	<b>422,323</b>	<b>439,071</b>	<b>399,631</b>
<b>Shareholders' Equity</b>					
Ordinary equity: \$1 par value shares	1,504	1,504	1,504	1,504	1,504
Share premium	2,699,996	2,699,996	2,699,996	2,699,996	2,699,996
Retained Earnings	(649,893)	(1,325,958)	(1,202,732)	(983,868)	(1,019,550)
<b>Total Shareholders' equity</b>	<b>2,051,607</b>	<b>1,375,542</b>	<b>1,498,768</b>	<b>1,717,632</b>	<b>1,681,950</b>
<b>Total equity &amp; liabilities</b>	<b>2,570,639</b>	<b>1,834,065</b>	<b>1,921,091</b>	<b>2,156,703</b>	<b>2,081,581</b>

- CAAC turned profitable in 2014, posting profits of \$123,000 in 2014 and \$218,000 in 2015
- Since 2011, TIST has sold 0.8m tCO<sub>2</sub> at a value of \$5m, and an average value of \$6.5 per tCO<sub>2</sub>. 2016 sales so far are <60,000 tCO<sub>2</sub>
- CAAC has been financed by shareholder equity and grants to date
- It has no long term liabilities; current liabilities of ~\$400k are to related parties with no defined payment date
- CAAC's net assets of \$1.7m comprise carbon-related assets, including verified carbon credits (\$0.5m) and work in progress (WIP) credits which have yet to be validated (\$0.7m)

### Additional information 7

#### TIST expansion forecasted financial performance

Expected business performance, excluding any loan repayments and profit share returns to CAAC and programme participants



- Between 2017 and 2046, at a market price of \$10 per tCO<sub>2</sub>e, an \$11m investment\* will support CAAC to:
  - Generate a net cash gain in excess of \$80m
  - Return \$245m in carbon benefits to farmers
  - Lead to non-carbon benefits of \$500m
  - Generate additional social benefits in excess of \$1.2bn

Data on carbon credit revenue to 2026 is based on TIST's actual experience of CO<sub>2</sub> sequestered to date. Data from 2027 onwards is based on conservative estimates of future CO<sub>2</sub> sequestration rates.

\* Assumes a 3% loan is provided between 2017 and 2022, with a 15 year tenor

# THANK YOU

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