

exhibition

S



ROADS FOR DEVELOPMENT



República Democrática de Timor-Leste
MINISTÉRIO DAS OBRAS PÚBLICAS

R4D
Estrada Rural ba
Dezenvolvimento

Australian
Aid



+C

Status of the Rural Roads Network in Timor-Leste

Most of the Rural Roads in Timor-Leste need full rehabilitation

Estrada Rural barak iha Timor-Leste presiza reabilitasaun kompletu



With its difficult terrain and climatic conditions, rehabilitating and maintaining rural roads in Timor-Leste is very challenging.
Ho nina terenu espostiku no kondisau klimatolika, dezenvole no mantein estrada rural iha Timor-Leste sai dezaflu boot.



The poor condition of many rural roads makes access to facilities and services, such as schools, difficult.
Kondisau estrada rural barak ne'ebé ladiak haló asesu ba fasilitade no asisténsia susar tabes, hanisan asesu ba eskola.



Without good rural road access, agricultural potentials cannot be achieved because farmers cannot transport their produce to the local markets at competitive prices.
Wainhita laha asesu ba estrada rural ne'ebé diak, potensialidade agrícola labela realzia tambo agrikultór sira labele transpota sira nia produtu ba merkado lokal ho presu ne'ebé kompetitivu.



With poor road conditions people have no access to public transport facilities.
Ho kondisau estrada ne'ebé ladiak, ema laha asesu ba fasilitade transporte público.



It is very important to stabilize landslide-prone areas alongside roads to ensure year-round accessibility.
Importante tebes atu estabiliza area hirik ne'ebé ha risku ba rai monu iha estrada ninin hodi bele garante assibilidade ne'ebé diak.



Water is the biggest enemy of roads and without adequate drainage structures or maintenance, road sections can quickly collapse.
Bee hanesan inimigu boot ba estrada no wainhita laha estrutura ka manutensaun baleta, seksaun estrada bele aat falas.



If rural roads are properly maintained there will be less need for emergency work or for complete rehabilitation.
Se ha manutensaun diak ba estrada rural, serbisu emerjénsia sel menus ka serbisu reabilitasaun kompletu ba estrada mos sel menus.

Status of the Rural Roads Network in Timor-Leste

Rural People think that Poor Rural Road Access is the Main Constraint to Development

Komunidade Rural sira hanoin katak Asesu ba Estrada Rural ne'ebé Ladiak mak sai Preokupasaun Prinsipal ba Dezenvolvimentu



Farmers living along the R&D rehabilitated road Lianai-Grotu, Manufahi District
Agrikultor sira hela besik iha estrada ne'ebé R&D reabilita iha Lianai-Grotu,
Distritu Manufahi



Farmers have to walk many hours to sell their produce in the local markets
Agrikultor sira tenki la'o durante oras barak nia laran hodi bele fa'an sira nia produtu
iha merkadu lokal



Local people on the way home carrying products bought in the local market in Same
Ema lokal sira wanhra ilia fal mai lor fal produtu hirak ne'ebé sira asesu
iha merkadu lokal iha Same



Women and children have to walk long distances to access health care facilities
Feto no labarik sira tenki la'o ho distancia dook hodi bele ba asesu facilidade
kürida saúde



Due to the poor road condition, people's operating and maintenance costs of vehicles and motorbikes are very high
Tamba kondisaun estrada ne'ebé ladiak, ema nia kustu operasional no manutensaun ba kareta no motor aas tabes



In the rainy season roads are very often not accessible to vehicles
Durante tempu údan, dalbarak kareta labele asesu estrada

Examples of some of R4D's Activities

Establishing Geographic Information Systems (GIS) for Better Planning

Estabelese Sistema Informasaun Jeográfika (GIS) ba Planeamento ne'ebé Diak



Training for MPW staff on map reading informasaun ba pesoal MOP sira kona-ba lee mapa



ILO staff explaining the use of GPS devices
escoal LO sira esplika oinsa atu uza sistema GPS



On the job training for MPW staff in recording GPS coordinates
Formasaun iha serbisu fatin ba pescal MOP sira kona-ba oinsa
atu lori kordenada GPS



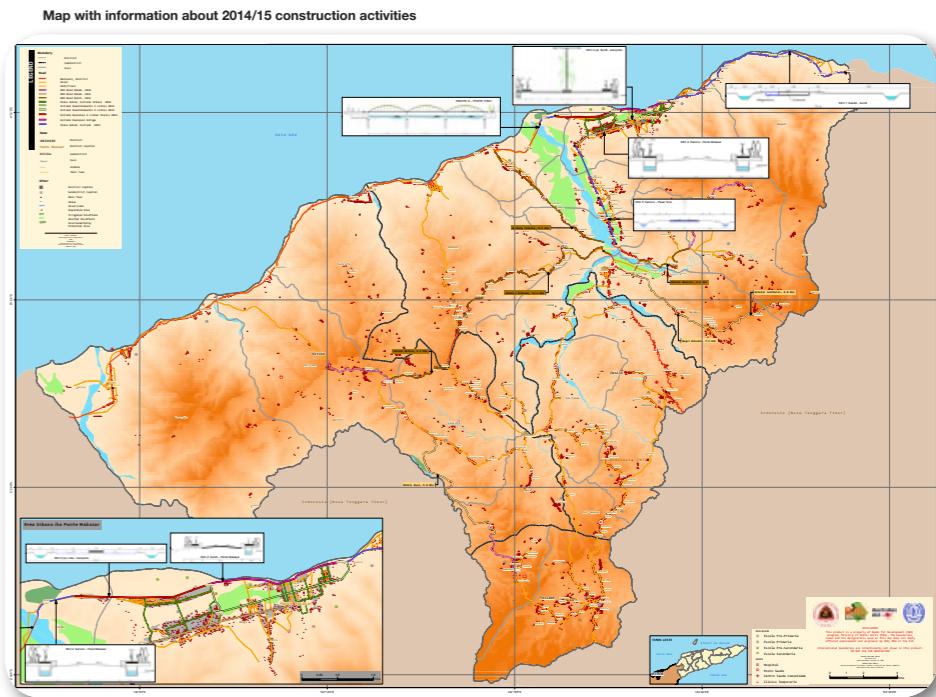
Training for MPW staff on the use of maps in the planning process
ormasaun ba pesoal MOP sira kona-ba uzu mapa iha prosesu planean

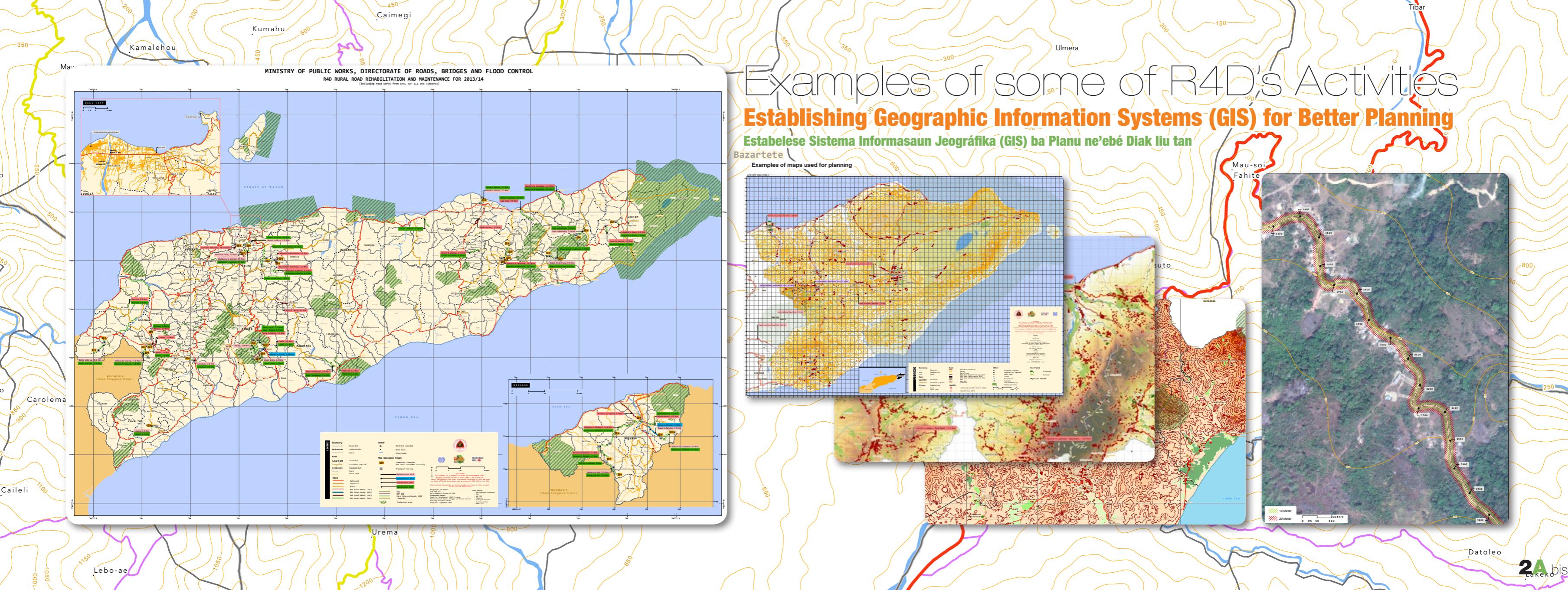
Establishing Geographic Information Systems (GIS) for Better Planning

R&D initiated in 2013 activities to support the Ministry of Public Works in the establishment of a Geographical Information System (GIS)/mapping functionality. This functionality is a key requirement for the Ministry to support the planning, design and monitoring of its public infrastructure investments. In 2013 the necessary hardware and software was procured and installed, data collection started and demonstrations of the functionality were provided. A GIS development plan was developed and its implementation started by the end of 2013. Nowadays a GIS unit has been formally established and is operational within the Directorate of Roads, Bridges and Flood Control of the Ministry.

Estabelese Sistema Informasaun Jeográfika (GIS) ba Planeamentu ne'ebé Diak

R4D inisia ona atividade hirak iha tiran 2013 hodi apóia Ministériu Obras Públiku ha establesementu Sistema Informasian Geográfica (GIS) mapamentu funksionalidade. Funksionalidaad ida ne' haneser rekerementu principal ba Ministériu hodi bele apoia planeamento, dezenju no monitorizaçao ba ninha investimento infraestrutura pública. Ha tira 2013, sosa no instala ona hardware no software hirak ne'ebé presiza, hahuu ona halbur didos no fornese ona demonstrasau funksionalidade. Desenvolve mos planu dezenvolvimento GIS ida no nriña implementasaun hahuu ona iha tiran 2013 nia rohan. Ohin loron, formalmente establese ona unidade GIS ida no unidade ne' e fusiona iha Diresaun Estrada, Ponte no Kontrolu Inundasaun iha Ministériu no okos.





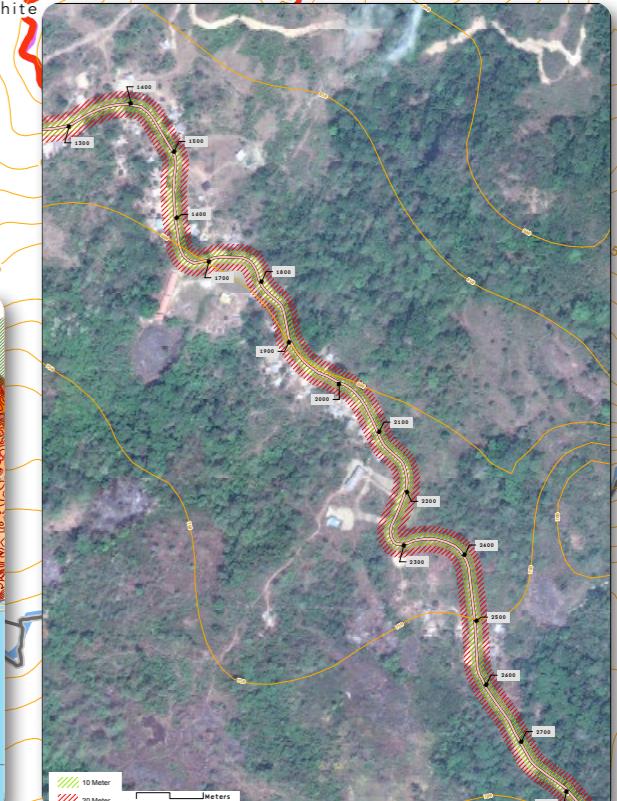
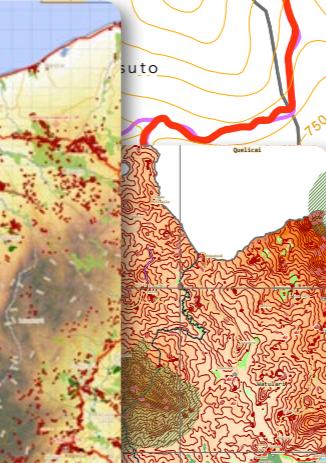
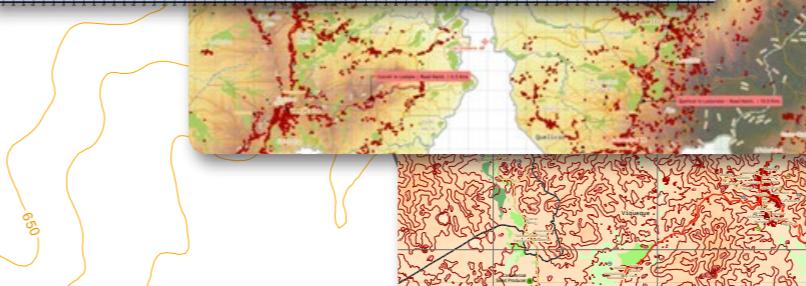
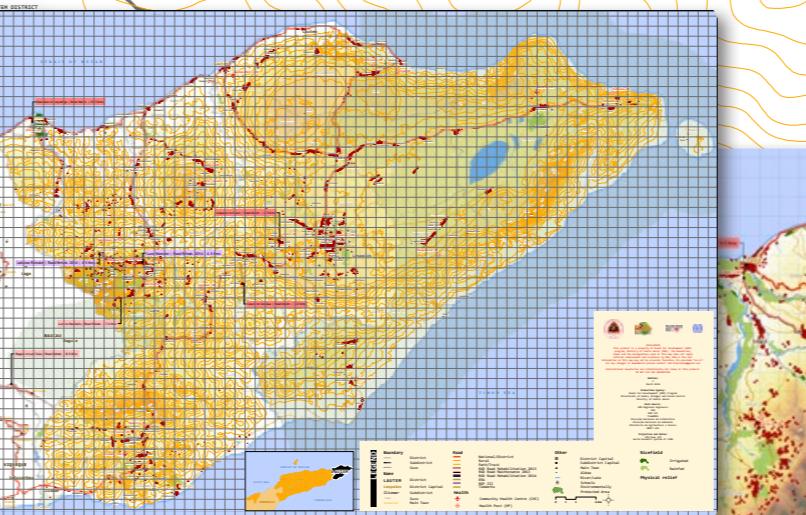
Examples of some of R4D's Activities

Establishing Geographic Information Systems (GIS) for Better Planning

Estabelese Sistema Informasaun Jeográfika (GIS) ba Planu ne'ebé Diak liu tan

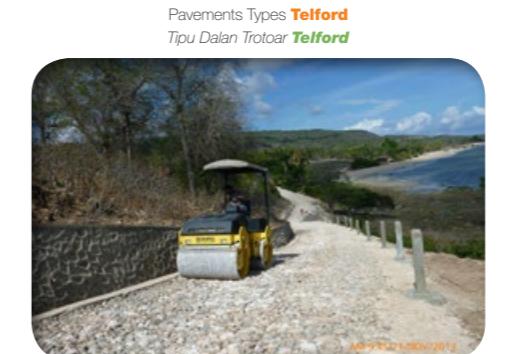
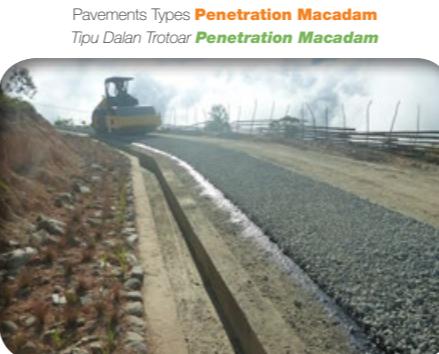
Bazartete

Examples of maps used for planning



Examples of some of R4D's Activities

Choosing Appropriate Pavement Types to Increase the Life-time of the Roads



Choosing Appropriate Pavement Types to Increase the Life-time of the Roads

Gravel, Telford, Plum Concrete and Penetration Macadam

Roads can be made out of many different materials and with different methods, each often suitable for a different gradient, level of rainfall, type of bedrock and soil and available budget. The various road surfaces can be categorised into unbound (loose stones and sand compacted into a tight layer), stone (large stones placed across the road surface), cemented (stones and sand held together by cement) and bituminous (stones and sand held together by bitumen). R4D has taken one road surface from each of these four categories - gravel (unbound), Telford (stone), plum concrete (cemented) and penetration macadam (bituminous) - and chooses which is most suitable for each site.

Hili Tipu Pavimentasaun/Alkatraun ne'ebé Apropriadiu hodi Hasa'e Peródu Durasaun Estrada nian

Fatuk rahun, Telford, Plum Betaun no Penetrasaun Macadam

Estrada bele halo ho material oi-oin no ho método oi-oir, kada ida dalábarak apropiadiu ba inklinasau rai, nível udan, tipu alisense no rai no orsamentu ne'ebé iha. Estrada ninh oi-oin bele kategoriza ba iha ida ne'ebé mamar (fatuk mamar no rai-henek ne'ebé aturu ba iha ninh leten mahar), fatuk (fatuk boot ne'ebé tau ba iha estrada leten), nahe simenti (fatuk no rai-henek kaer hamutuk ho simenti) no betuminozu (fatuk no rai-henek kaer hamutuk ho alkatraun). R4D koko atu nahe ora estrada leten ho kada ida husi kategoria haat ne'ebé - fatuk rahun (estrada mamar), Telford (fatuk), plum betaun (nahe ho simenti) no penetrasaun macadam (betuminozu) – no hili ida ne'ebé mak apropiadiu liu ba kada lokalidade.

Examples of some of R4D's Activities

Using Effective Bio-engineering Techniques to Stabilize Erosion-prone Areas

Uza Tékniku Efetivu Bio-Enjineria hodi Estabiliza Area hirak ne'ebé iha Risku ba Erosaun

Using Effective Bio-engineering Techniques to Stabilize Erosion-prone Areas

Many slopes in Timor-Leste are steep and unstable. With heavy rains, landslides and other forms of slope damage are inevitable. When roads are rehabilitated, slopes are often made steeper and more prone to sliding. Removing grass and other vegetation, either by the landowners or by the construction companies, makes slopes even more unstable. Bio-engineering is the use of vegetation to support slopes and prevent slides and erosion. Bio-engineering techniques include grass planting to prevent topsoil erosion and tree planting to prevent deep landslides. Civil engineering and bio-engineering are often combined to give slope protection that will last for a long time.

Uza Tékniku Efetivu Bio-Enjineria hodi Estabiliza Area hirak ne'ebé iha Risku ba Erosaun

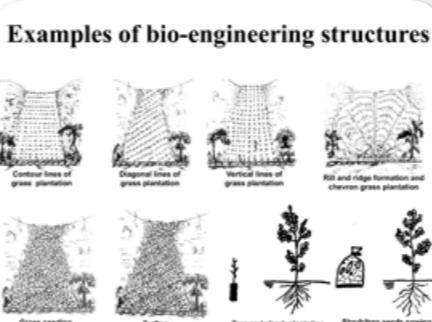
Rai-lolon barak Timor-Leste mak naruk no la estavel. Ho udan boot, rai monu no estragu barak tan ba rai-lolon hanesan buat ne'ebé ita labele evita. Wainhira reabilita estrada, dalabarak rai-lolon sai naruk no risku liu tan ba rai monu. Ke'e sai duut no ai-horis hirak seluk, rai na in mak halo ka kompania konstrusau mak halo, halo rai-lolon sai la estavel liu tan. Bio-enjineria hanesan utilizasaun ai-horis hodi apola rai-lolon no prevene rai monu no erosau. Tékniku Bio-enjineria inkliku kuda d'u't hodi prevene erosau rai leten no kuda ai hodi prevene rai monu. Enjineria sivil no bio-enjineria dalabarak tau hamutuk hodi bele di protesaun diak ba rai-lolon ne'ebé sei dura ba tempu naruk.



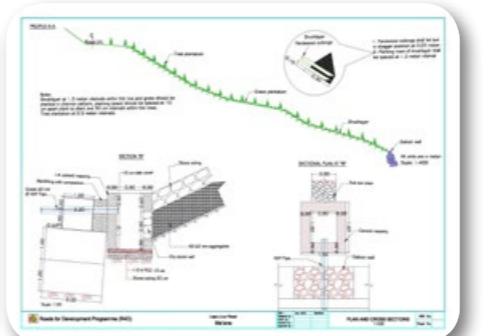
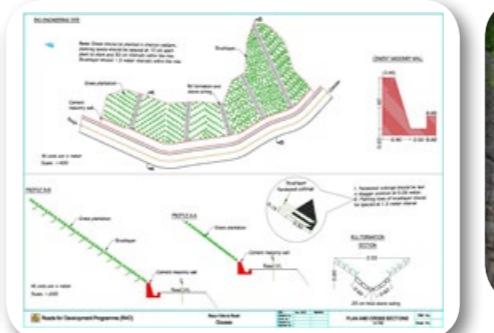
On-going bio-engineering works on steep slopes
Kontinuasaun hala'o serbisu bio-enjineria iha inklinasaun naruk



Completed bio-engineering works alongside R4D rehabilitated road
Kompleta ona serbisu bio-enjineria iha estrada hirak ne'ebé R4D reabilita ona



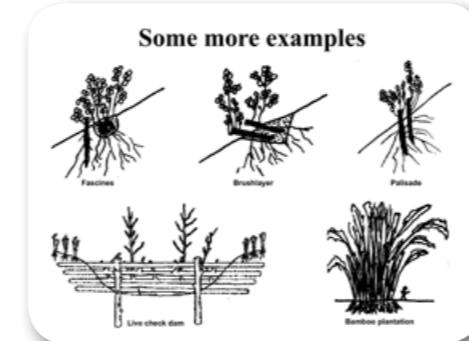
Examples of bio-engineering structures



Combination of gabions and bio-engineering to prevent erosion and landslides on steep slopes
Kombinasau gabieu no bio-enjineria hodi prevene erosau iha rai ho inklinasaun naruk



Bio-engineering works, including sub-soil drains, to prevent erosion and landslides
Sersisu bio-enjineria, inkli baleta sub solo, hodi prevene erosau



Some more examples

Operation & Maintenance [O&M]

Without maintenance, hundreds of millions of dollars of investments in improving the rural roads will be lost

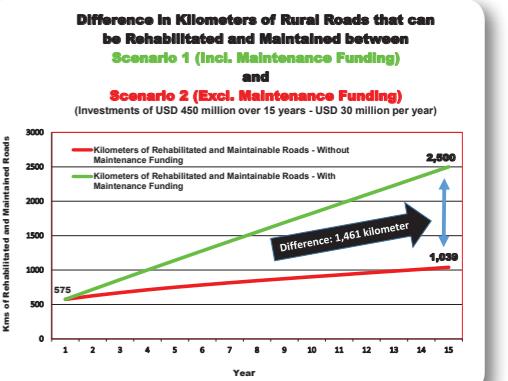
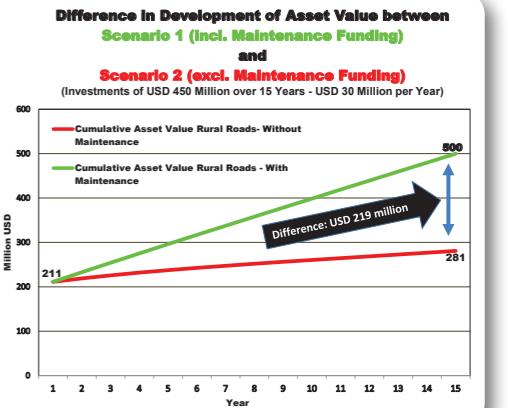
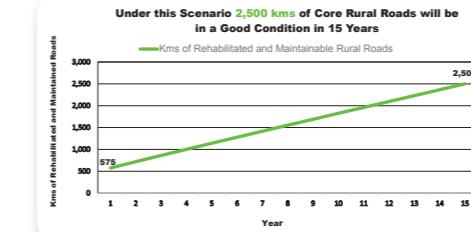
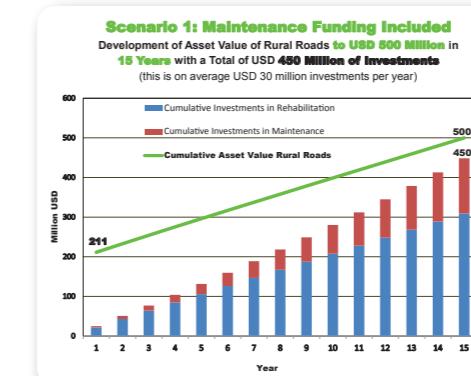
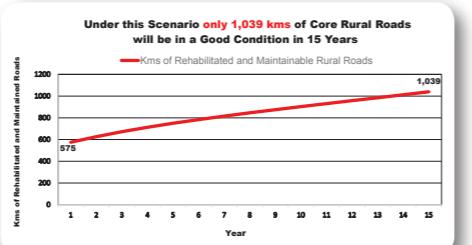
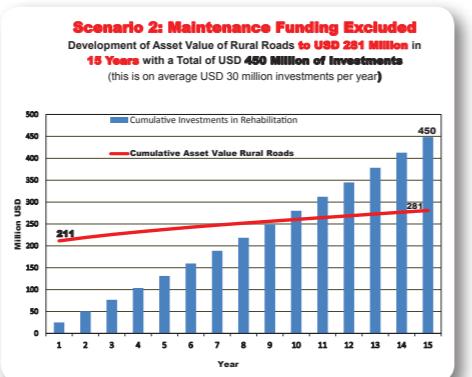
Wainhira laiha manutensaun, investimentu ho osan miliaun atus resin hodi hadi'a estrada rural sei lakon hotu

Without maintenance, hundreds of millions of dollars of investments in improving the rural roads will be lost

Maintaining rural roads that are in a good or fair condition needs to be given top priority in the investment strategy for rural roads. Maintenance is the most cost-effective way to keep roads in a good condition for a long time. Maintenance costs are only about 4% of full rehabilitation costs. If maintenance is being neglected, the condition of the roads quickly deteriorates and very expensive rehabilitation or reconstruction works will be required, for which however funding is often not available. A lack of maintenance will also have a negative spin-off effect on the local economy as deteriorated roads will hamper local economic growth. It is therefore essential that sufficient budget is allocated every year to cover maintenance requirements of Timor-Leste's maintainable rural roads.

Wainhira laiha manutensaun, investimentu ho osan miliaun atus resin hodi hadi'a estrada rural sei lakon hotu

Presiza fó prioridade aas ba manutensaun ba estrada rural ba kondisaun n'ebé diak no justu iha investimentu estratéjia ba estrada rural. Manutensaun hanesan maneira ida n'ebé efetiu liu iha kustu hodi bele mantain estrada iha kondisaun diak ba tempu naruk. Kustu manutensaun hamutuk 4% deit huktu reabilitasaun kompletu. Se ita li ligu manutensaun, kondisaun estrada sai aat lalais no presiza seribus reabilitasaun ka rekonstruasaun ne'ebé karun tebes, ne'ebé dalabarak ninia fundu la disponivel. Falta manutensaun sei iha mos impaktu negativu ba ekonomia lokal tamé estrada n'ebé aat sei impede kresmentu ekónomicu lokal. Nune'e, importante tebes atu aloka orsamentu n'ebé naton kada tiran hodi kobre rekerentu manutensaun ba manutensaun estrada rural iha Timor-Leste.



Examples of some of R4D's Activities

Testing the Quality of Compaction Using the Dynamic Cone Penetrometer (DCP)



Training on DCP testing for MPW staff and local contractors
Formasaun kora-ba teste DCP ka pescal MOP sira
no kontrator lokal sira



Reading the depth of penetration of the DCP cone
Lee didak penetrasaun cone husi instrumentu DCP



Showing how the penetration of the cone should be measured
Hati du orisa pressa sukat penetrasaun cone



DCP readings are taken at regular intervals
Lee DCP sei hab ha intervalu regular

Testing the Quality of Compaction Using the Dynamic Cone Penetrometer (DCP)

Loose soil collapses under heavy traffic loads, absorbs water and softens, gets blown away by wind and gets washed away by rain. Well compacted soil can support loads, does not absorb water and is resistant to wind and rain. It is therefore important to compact soil on a road, but it is also important to measure the compaction to know if it is sufficient for the road and the traffic. Early test methods involved involving laboratory analysis but the Dynamic Cone Penetrometer (DCP) is portable, easy to use and can give results very quickly, and is therefore suitable for use on rural road sites. Feel free to try it out and test the gravel in the box.

Koko Kualidade Ateru/Kompaktaasun Uza Dynamic Cone Penetrometer (DCP)

Rai ne'bébé mazan sei estragu letais waninha tha traffiku ne'bébé todan, absorba bee no sei mamar iu tan, annin bele huu aat thia no udat bele estraga tha. Rai ne'bébé kompakta ho didik bele apoiu todan, la absorba bee no sei tahan annin no udat. Nune'e importante lobes atu kompata rai iha estrada ida, mabe importante mos atu sukat kompaktaasun hodi hatene se nia natoon ona ba estrada no traffiku. Método teste barak involve analize laboratoriu naruk malbu Dynamic Cone Penetrometer (DCP) portavel teber, fasli atu uza no bele fo rezultadu laba, nune'e apropriadi atu uza iha lokalidade estrada rural. Imi bele seni live atu koko no teste fatuk rahuu iha kasa laran.

Examples of some of R4D's Activities

Including Social Safeguards in R4D to Promote Social Inclusion



R4D promotes women's participation in the road works

R4D promove partisipasun feto iha seribu estrada nian



R4D provides flexible working hours which facilitates the participation of women in the road works
fomese oras seribusu ne'ebe flesovel ne'ebe fassila partisipasun feto iha seribu estrada



Stabs ananuun dha iha seribu estrada iha kela kela access for people with disabilities

Konstru ora piaku hirak iha baleka hodi baleka fasilita asusu ba ema ho kondisun defisienti



Adapting safety equipment needed by all labourers according to the specific task they are doing
Fornesu mos ekakamento sigur ne'ebe adekuada ba traballador hotu tur kraar espessiku ne'ebe sira hal'o First-Aid kts.



Protective gloves are used for different types of activities, such as working with cement and bitumen

Luvias protetivu ba tipu atividade ci-oi,
hanesau seribu ho siment no bitumen



Gloves are also used when labourers are working with stones
Uza mos luvias wainhira traballador sira seribusu ho fatuk

Including Social Safeguards in R4D to Promote Social Inclusion

R4D has developed and field-tested a Social Safeguard Framework for rural road works in Timor-Leste. This Framework guides the implementation of social-inclusive and rights-based practices in investments in rural roads in Timor-Leste.

The Social Safeguards Framework includes provisions and measures that are important for involved communities and contractors during the planning, design and implementation of R4D's rural road works. These relate for example to:

- Adherence to the minimum wage;
- Design options that accommodate the needs of people with a disability;
- Accident insurance for workers;
- Measures that promote equal treatment of women and men;
- The provision of protective clothing and gear for workers;
- The supply of appropriate work tools;
- The provision of drinking water;
- Training of staff of the Ministry of Public Works and the contractors on First Aid and the on-site availability of First-Aid kits.

The contracts that are signed with the contractors for the implementation of the works include special conditions that stipulate the Social Safeguards requirements. The Ministry of Public Works has also recruited field-based Community Development Officers (CDOs) who engage with communities and contractors to foster awareness about the Social Safeguards and guide and supervise their implementation in the field.

R4D is continuously monitoring the usefulness of - and compliance to - the Social Safeguards. As required, refinements are made to ensure continued relevance and effectiveness of the provisions and measures under the Social Safeguards Framework.

Inklui Garantia Sosial iha R4D hodi Promove Inkluzuun Sosial

R4D dezenvolve ora Kuadru Garantia Sosial Ida hodi bele koko terenu ba seribusu estrada nian iha Timor-Leste. Kuadru ida ne'e già implementasun práktika hirak ne'ebe sosialmente inkluziu no bazeia ba detru iha investimento ba estrada rural iha Timor-Leste

Kuadru Garantia Sosial inklui provizaun no sasukat hirak ne'ebe importante ba involvimento komunitade no kontrator durante planej, dezseja no implementasun seribusu estrada rural R4D nian. Butuh hirak ne'e relasione ho:

- Konformidade ho vensimentu minimu;
- Opsaun dezseju ne'ebe akomoda nesidadise ema ho kondisun defisienti;
- Siguru asidenti ba traballador sira;
- Sasukat hirak ne'ebe promove tratamento hanesau ba fato no mane sira;
- Provizaun hatalis no ekpanmentu protetivu ba traballador sira;
- Fornesimentu instrumentu seribu ne'ebe apropiada;
- Provizaun bee hemu;
- Formasaun ba funksionaru Ministerio Obras Pública nian kona ba Primeiro Sekoru no disponibilidaade pakete Primeiro Sekoru ba lokalisade

Kontrato hirak ne'ebe kontrator ba implementasun seribusu inklui kondisun espasial ne'ebe estipula referente Garantia Sosial. Ministerio Obras Pública mos rekrua Ofisial Dezenvolvimento Komunitade (ODO) ne'ebe seribusu iha terenu, ne'ebe invoku ho komunitade no kontratoro sira hodi bele hamelin lu ia konsensiencia kona ba Garantia sosial no gai no superviziora sira nia implementasun iha terenu.

R4D continua monitoriza utilidade no konformidade ho Garantia Sosial. Wainhira presza, sei realina falu bele garante kontinuasun relevansa no efetividade provizaun no sasukat hirak iha Kuadru Garantia Sosial.



Safety hats are used if there is a risk that materials could fall down
Sapeeo siguru uza wainhira iha risku material bele monu tan ba ema

Benefits of R4D's Rural Road Rehabilitation Works

Comparing the Road Condition Before and After R4D's Rehabilitation Works

Before



R4D rehabilitated road, Boile-Uatabo (5.2 Km), Baucau District
Estrada ne'ebé R4D reabilita ora iha Boile-Uatabo (Km 5.2),
Distritu Baucau



R4D rehabilitated road, Oelular-Leolobatan (8.0 Km), Cecusse District
Estrada ne'ebé R4D reabilita ora iha Oelular-Leolobatan (Km 8.0),
Distritu Cecusse



R4D rehabilitated road, Boile-Uatabo (5.2 Km), Baucau District
Estrada ne'ebé R4D reabilita ora iha Boile-Uatabo (Km 5.2),
Distritu Baucau

After



Benefits of R4D's Rural Road Rehabilitation Works

Examples of some of R4D's Rehabilitation Works



R4D rehabilitated road, Boile-Uatabo (5.2 Km), Baucau District:
Concrete pavement on a steep section
Distru Baucau, R4D reabilita ora estrada Boile-Uatabo (Km 5.2);
Tratoar ho betaua iha sekusaun rai naruk



R4D rehabilitated road, Maliana-Saburai (11 km), Bobonaro District:
On flat sections often gravel is used
Distru Bobonaro, R4D reabilita ora estrada Maliana-Saburai (Km 11);
Iha sekusaun kabear deabarak uza deit fatuk ranuh



R4D rehabilitated road, Liana-Grotu (8.4 km), Same District:
Concrete pavement on a steep section
Distru Same, R4D reabilita ora estrada Liana-Grotu (Km 8.4);
Ezemplu seluk ida husi tratoar betaua iha sekusaun ida no gradient
estrada iha rai naruk



R4D rehabilitated road, Maliana-Saburai (11 km), Bobonaro District:
In densely populated areas a proper sealing minimizes dust pollution
Distru Bobonaro, R4D reabilita ora estrada Maliana-Saburai (Km 11);
Iha area ne'ebé populasaun sira hela banu ku, vedasaun adekuada sei
minimiza poluaun rai naruh



R4D rehabilitated road, Balibo-Cowa (10 Km), Bobonaro District:
Another example of concrete pavement on a section with a steep
road gradient
Distru Bobonaro, R4D reabilita ora estrada Balibo-Cowa (Km 10);
Ezemplu seluk ida husi tratoar betaua iha sekusaun ida no gradient
estrada rai naruk



R4D rehabilitated road, Luro-Baricafá (7 km), Lautem District:
Example of a level crossing across a wide river
and gabion protection works
Distru Lautem, R4D reabilita ora estrada Luro-Baricafá (Km 7);
Ezemplu rivel pasagem ida kota molu ho serbisu protessaun gabion



R4D rehabilitated road, Lookeu (3 km), Covalima District
Distru Covalima, R4D reabilita ora estrada Lookeu (Km 3)

Impaktu husi Estrada Rural R4D nian ne'ebé Diak ona ba Komunidade Lokal nia Moris diak

Benefits of R4D's Rural Road Rehabilitation Works

Impact of R4D-improved Rural Roads on the Livelihoods of Local Communities



More products, including agricultural products and building materials, are transported
Produku baruk iu tan, inkui produtu agrikatura no material ba uma nian
mek bele transporta ona



Ambulance services can now reach remote communities 24-hours per day
Asisténsia ambulânsia bele to'o ona ba komunidade iha area remota
durante oiss 24 ba loron ida



Increase in public transport facilities
Aumentu iha fasilitade transporte públiku



SISCA staff can provide regular maternal care services to women and children
Pessoal SISCA sira bele fornese asisténsia kuidadu saude maternal nian
regularmente ba fetor no labank sira



Improved business opportunities for local communities
Futuru



Increased agricultural production
Futuru

Benefits of R4D's Rural Road Rehabilitation Works

Success Stories



A better house for a better future

Mario Lopez and his family live at the end of the Maliana-Saburai R4D rehabilitated road, on the border with Indonesia, in Bobonaro District. For many years he and his family used to carry products to their households from the District Capital Maliana. They used to live in a house made of bamboo which did not provide adequate shelter and was prone to adverse effects of heavy winds and rains. With the rehabilitation of the road, transport of buildings materials became possible, and trucks transporting cement started to regularly travel on the road up to Suco Saburai. Mario has recently completed the construction of a new house for himself and his family. Other members of the local community are doing the same and many new houses have been constructed along the road.

Uma diak ida ba futuru ida ne'ebé diak

Mario Lopez ho ninia familia hela iha parte rohan husi estrada ne'ebé R4D rehabilita iha Maliana-Saburai, Ira Maliana, Distrito Bobonaro. Desa Saburai. Ba ibun besa, hela ho ninia familia normatamente iori produku hirik ba sira nia una-kain husu Kapital Distritu Maliana. Sira hela iha uma ida ne'ebé halo husi au ne'ebé la fornese mahon ne'ebé raton no iha risku ba efetu anni no utan boot. Ho rehabilitausan estrada, transportasauan material hodi halo uma nian sia posivel, no kaminetu hirik transport Simerten hahu hahu ola wajen regulamente iha estrada to'o iha Sukul Saburai. Foin daduan n'e. Mario foin kompleta konstrusuan uma foun ida ba iha nia no familia. Memburu seluruh husi komunitade lokal hala'oh atividade hanesau no konstrui ona uma foun barak iha estrada ibun.



Better access to markets and increased income opportunities

R4D started the rehabilitation of the 5.2 km long Bolle-Uatabo road in April 2013. Before the road was rehabilitated, it was not passable for motorized vehicles.

Batista Ann is one of the fishermen living along the section of the road close to the beach. In the past he used to carry fish on his shoulders and sell it at the market in Baucau town. After the road was improved and people of the community gained year-round motorable access, traders started buying fish directly from fishermen at the beach every day. Batista experienced a 30% increase in sales from fishing that allowed him to build a kiosk along the road. He also started growing vegetables in a small agricultural field in front of his kiosk and he started to sell these vegetables at the market.

Asesu diak liu ba merkado no aumentu oportunidade rendimento

R4D halau rehabilitasaun ba estrada ho medida Km 5,2 km iha estrada Bolle-Uatabo iha fular Abril 2013. Molok estrada ne'ebé, karota lu tadiak.

Batista Ann hanesan peskador da ne'ebé hela iha selaisan estrada besik ba tasi ibun. Uluk nimis sempri lor ikan iha ninia kababe no ba fa'ana iha sidikae Baucau. Hafon estrada diak thia no ema komunitade nian iha assu ba kareta, intermediaru sira hahu sosa. Kan diretamete husi peskador sira tasi ibun lor-koron. Batista hetan aumentu iha ninia vendia husi peska ne'ebé pemite nia atu loke kios ida iha estrada ibun. Lu tan, nia hahuu kuda modo iha terenu agrikultura k'lik ida iha ninia kios oin no hahuu fa'an modo iha merkado.



Promoting Rural Entrepreneurship through Improved Rural Road Access

Cecilia Baptista lives with her husband and 14 other household members in a house along the R4D rehabilitated road Laurala-Omai. One year ago the road was not accessible for motorized transport, particularly during the rainy season. Some time ago, when R4D's rehabilitation works were completed, Cecilia and her husband saw the opportunity to start a bakery business next to the road. With the improved road it became possible to rent a truck and transport flour from Dil at affordable prices. Initially Cecilia baked bread only for neighbors and relatives. As more demand for her bread became apparent, the business was expanded and at present 6 family members are involved in the bakery business and daily turn-over has increased to 150-200 US \$ per day. Customers now also include small shops located in nearby villages and the main market in Dil.

The village where they live also has tourism potential due to a waterfall located a few kilometers further along the road. This has given Cecilia and her family the idea to set up a coffee shop next to their home that will serve coffee and bread to tourists and offer employment opportunities to other members of the community.

Promove Ispiritu Emprezaarial rural liu husi Asesu ne'ebé Diak ba Estrada Rural

Cecilia Baptista hela ho nia kabeh-mane no membru uma-kain 14 seluk iha uma ida iha area estrada Laurala-Omai ne'ebé R4D realibita hela. Tinan ida lu ba, estrada ne'ebé ema ho transporte motorizada labele lu, lu-lu durante tempu udan. Fulan neen iha ibun, wainhira serbisu realibitasauan R4D nian halau' hela. Cecilia ho nia familia hanece oportunidade atu hahuu negosiu tunu dosi ida hamutuk ho estrada ne'ebé. Ho estrada ne'ebé diak ona, sira iha possibilidate atu aluga kaminel ida no trasporta tarifa husi dil ho presu ne'ebé sira bele selu. Fofoun Cecilia tunu deit paun ba nina vizhu no familia. Wainhira iha luan ezzentu iha sira hela iha merkado iha ne'ebé. Iha ne'ebé hahuu tan no oras ne'ebé iha membru familia naun 6 k'lik. Induve iha negosiu tunu paun no dosi ne'ebé no ocean ne'ebé na hatan lor-loan sae fusu US\$ 150-200 kada k'lik. Oras ne'ebé nina konsumidor inklus mola k'lik hirak iha sira basik no merkadi/principai suku.

Suku ne'ebé sira hela ba mos iha potensialidade ba turismo, kacelera (air torjan) ne'ebé lokalem kilometru hira deit husi estrada ibun. Ida ne'ebé oferessi ideia ida ba Cecilia ho nia familia atu establecesse loja kafe ida basik ba sira nia umas ne'ebé sei seno kafe no paun ba turista sira no oferessi oportunidade empregu ba membru komunitade seluk.

