

Resume

1. **Family name** Grinand
2. **First name** Clovis
3. **Date of birth** 10/2/83
4. **Nationality** France
5. **Civil status**
6. **Education**

<i>Years</i>	<i>Institution</i>	<i>Degree(s) or Diploma(s) obtained</i>
2009-2010	AgroParisTech, Engref et SupAgro	Master of Advanced Studies in GIS for Landscape Management
2004-2006	University of Orléans	Master in Geology, Soil and Remote Sensing
2003-2004	University of Greenwich, UK	Bachelor of Science in Geology, Environment and GIS
2001-2003	University of Saint Etienne	University of Technology Diploma in Environment
2001	Lycée de l'Albanais, Rumilly, 74	Scientific French Baccaalaureate - with Merits

7. Language skills

<i>Language</i>	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
French	1	1	1
English	1	1	1
Spanish	1	3	3
Portuguese	3	3	3
Malagasy	5	5	5

8. Member of a professional organization

9. **Current position** Project Manager / France
10. **Years of experience** 18 years

11. Key qualifications

Research and development

- Development of innovative tools and methodology, quality control and accuracy assessment, capacity building, peer-review journal publication

Field of expertise

- Implementation of environmental studies involving soil science, forestry, agronomy, hydrology and earth observation expertise, from landscape to national scale.

Technical skills

- Ability to use a large panel of software within the domain of GIS, Database Management, Remote Sensing and Spatial Modelling.

Project management

- Implementation of Landscape Management project, technical and financial proposal, multi stakeholder discussion, monitoring and reporting

12. Professional experience

<i>Dates</i>	<i>Location</i>	<i>Company</i>	<i>Position</i>	<i>Description</i>
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Since February 2013	France (Paris-Montpellier)	NITIDÆ (ex-ETC TERRA) (Ref : Matthieu Tiberghien) & IRD (Ref : Martial Bernoux)	Project Manager - PhD Student IRD	<p>Project Manager – Etc Terra association / Nitidæ Involved in various projects implemented by the Etc Terra association (www.etcterra.org) as an environmentalist and geographer expert:</p> <ul style="list-style-type: none"> • Implementation of environmental studies in different development countries. At landscape scale focusing on soil, forest and water impact assessment • Setting up the research and innovation laboratory within the association (Etc Lab') • Designing measuring and monitoring framework and indicators using field inventory, geo-information system and remote sensing techniques • Training courses ranging from field biomass and soil inventory, GIS basics or advanced techniques, remote sensing and modelling <p>PhD with IRD and CIRAD (CIFRE, 2013-2016)</p> <ul style="list-style-type: none"> • Title of the thesis : <i>Monitoring and modeling land use change and carbon stocks in soil and biomass in the REDD+ context in Madagascar. Towards locally relevant and globally coherent measurements.</i> • Three main issues are addressed in three articles (see publications): <ul style="list-style-type: none"> • Estimating historical small scale deforestation due to slash and burn practices • Measuring and monitoring soil organic carbon from plot to regional scale • Spatially explicit forecast of deforestation, degradation and regeneration for the two next decades
May 2012 to February 2013	France (Paris)	Etc Terra	Consultant & Etc Terra collaborator	<ul style="list-style-type: none"> • Development of a deforestation mapping method using remote sensing techniques • Webmapping platform development • Implementation of environmental studies • <i>Funding: Action Carbon Program, Air France</i>
May 2011 to May 2012	France (Paris) and Madagascar (Antananarivo)	Goodplanet (Ref: Matthieu Tiberghien)	Mission officer in GIS, Soil and Remote Sensing	<p>Development of the reference emission level of a REDD+ pilot projet</p> <ul style="list-style-type: none"> • Definition and monitoring of socio-economic studies, photo-interpretation and modelling of the baseline and soil carbon losses. • Technical expertise in land cover change map quality assessment. • Training in GIS and Remote Sensing • Development of the project database management system and the geoport web interface for project data visualisation and sharing. • <i>Funding: Action Carbon Program, Air France</i>
February to May 2011	France (Montpellier)	Self-employed	Remote sensing Consultant	<p>Detection of historical deforestation using remote sensing</p> <ul style="list-style-type: none"> • Realisation of a wall to wall remote sensing study for three date over 7 million hectares of project reference area. • <i>Funding WWF-GP</i>
May to November 2011	France (Montpellier)	IRD (Ref : Martial Bernoux, Alain Albrecht)	Engineer	<p>Soil carbon stock inventory and mapping at regional scale</p> <ul style="list-style-type: none"> • Realisation of the soil carbon stock mapping tools using remote sensing images and field soil survey and measurements. • <i>Funding WWF-GP-IRD-CNES</i>
July to October 2010	France (Montpellier)	IRD (Ref : Martial Bernoux, Alain Albrecht)	Engineer	<p>Statistical modelling</p> <ul style="list-style-type: none"> • Comparative study of statistical model for predicting soil properties using infra red soil spectrometer. Research collaboration with national research institute (IRD and INRA). • <i>Funding : Programme Gessol, MEDD</i>
July 2007 to May 2009	Madagascar (Antananarivo)	IRD (Ref : Martial Bernoux, Alain Albrecht)	Engineer	<p>International Volunteer Mission in Madagascar</p> <ul style="list-style-type: none"> • Supervision of VALSQL project "Pilotage project Valsol (Digitalisation of old soil map, soil database management, thematic analysis). • Technical assistant in a PhD on soil and biomass carbon stocks modelling and mapping for coppice eucalyptus plot at county scale • Land cover mapping using remote sensing • GIS Training for staff • International scientific publication • <i>Funding: IRD</i>
May to November 2006	France (Orléans)	INRA (Dominique Arrouays)	Engineer	<p>Development of a soil-landscape mapping approach</p> <ul style="list-style-type: none"> • Comparative study of recent approaches and proposal of a specific tool based on old map and multi source spatial dataset. • International scientific publication. • <i>Funding: INRA, Program IGCS</i>

SPECIFIC EXPERIENCES

May 2017, Sep 2017, Nov 2017, May 2018	Mozambique	Co-Team Leader, Program LAUREL (World Bank) Land Use Planning for Enhanced Resilience of Landscapes Mozambique
Dec 2012, Dec 2014, May 2017, Sept 2017, Dec 2017	Mozambique	Feasibility study (Reserve National do Gilé Project), support and project monitoring mission (Reserva National do Gilé Project)
Jan 2007, May 2009, Aug 2011, May 2012, Ap 2013, Sept 2013, Ap 2014, Oct 2014, Mar 2015, Oct 2015, March 2016, Oct 2016, March 2017, Nov 2017, March 2018	Madagascar	Project monitoring, technical support, research activities (projects : PHCF, PERRFH, MAHAVOTRA, KOLORANO)
July 2015, June 2016	Laos	Support and project monitoring mission (Vienghrum, FORAE project)
March 2013, May 2015	Senegal	Support and project monitoring mission (Sine Saloum, Keur Sambel project)
September 2013, May 2014	Haiti	Support and project monitoring mission (Cap Haitien, PAD NORD project).
December 2013, June 2014	Democratic Republic of Congo	Support and project monitoring mission (Bas Congo, APROFIL Project)
July 2011	Rwanda	WHRC Conference and forest inventory and training mission
September 2003 to July 2004	UK	Education and professional internship

13. Publications

- Grinand C, Le Maire G, Vieilledent G, Razakamanarivo H, Razafimbelo T, Bernoux M. 2017. Estimating temporal changes in soil carbon stocks at ecoregional scale in Madagascar using remote-sensing. *Int. Journal of Applied Earth Observation and Geoinformation*, 54, 1–14. <http://dx.doi.org/10.1016/j.jag.2016.09.002>
- Clairotte M, Grinand C, Kouakoua E, Thebault A, Saby N, Bernoux M, Barthès B. 2016. National calibration of soil organic carbon concentration using diffuse infrared reflectance spectroscopy. 276, 41-52, doi.org/10.1016/j.geoderma.2016.04.021
- Vieilledent G, Gardi O, Grinand C, Burren C, Andriamanjato M, Camara C, Gardner CJ, Glass L, Rasolohery A, Ratsimba H, Gond V, Rakotoarijaona J. 2016. Bioclimatic envelope models predict a decrease in tropical forest carbon stocks with climate change in Madagascar. *Journal of Ecology*, 104: 703-715.
- Rakotomala F.A, Rabenandrasana, J. C., Andriambahiny, J. E. 4, Rajaonson R., Andriamalala, F., Burren, C., Rakotoarijaona J.R., Parany, L., Vaudry, R., Rakotoniana, S., Grinand, C. 2015. Estimation de la déforestation des forêts humides à Madagascar entre 2005, 2010 et 2013. *Revue Française de Télédétection et Photogrammétrie*, 211-212, 11-23
- Grinand, C., Rakotomalala, F., Gond, V. Vaudry, R., Bernoux, M., Vieilledent, G. 2013. Estimating deforestation in tropical humid and dry forests in Madagascar from 2000 to 2010 using multi-date Landsat satellite images and the random forest classifier., *Remote Sensing of Environment*, <http://dx.doi.org/10.1016/j.rse.2013.07.008>
- Vieilledent G., Grinand C. and Vaudry R. 2013. Forecasting deforestation and carbon emissions in tropical developing countries facing demographic expansion: a case study in Madagascar. *Ecology and Evolution*. 3:1702-1716. [doi: 10.1002/ece3.550].
- Grinand, C. Barthès, B.G., Brunet, D., Kouakoua, E., Arrouays, D., Jolivet, C., Caria, G. Bernoux, M. 2012. Prediction of soil organic and inorganic carbon contents at national scale using mid infra red reflectance spectroscopy (MIRS). *European Journal of Soil Science*, 63, 2, 141–151. DOI: 10.1111/j.1365-2389.2012.01429.x
- Le Maire, G., Marsden, C., Nouvellon, Y., Grinand, C. Hakamada, J.S., Laclau, J-P. 2011. MODIS NDVI time-series allow the monitoring of Eucalyptus plantation biomass. *Remote Sensing of Environment*, Volume 115, Issue 10, 2624-2625
- Razakamanarivo R.H., Grinand C., Razafindrakoto, M.A., Bernoux, M., Albrecht, A., 2011. Mapping organic carbon stocks in eucalyptus plantations of the central highlands of Madagascar: A multiple regression approach. *Geoderma*, Volume 162, 3-4, 335-346. doi:10.1016/j.geoderma.2011.03.006
- Grinand, C. 2010. Développement d'une méthode de cartographie des stocks de carbone dans le sol : Application à un projet REDD+ à Madagascar. Rapport d'étude Mastère SILAT, 35p.
- Grinand, C. 2010. Développement d'une méthode de cartographie des stocks de carbone dans le sol : Application à un projet REDD+ à Madagascar. Rapport d'étude Mastère SILAT, 35p.
- Grinand, C., Rajaonarivo, A., Bernoux, M., Pajot, V., Brossard, M., Razafimbelo, T.M., Albrecht, A., Le Marthret, H., 2009. Estimation des stocks de carbone dans les sols de Madagascar. *Etude et Gestion des Sols* 16, 23-33. www.afes.fr/afes/egs/EGS_16_1_grinand_web.pdf
- Grinand C, Razakamanarivo H., Razakavololona A., Albrecht A., 2008. Étude des changements d'occupation du sol et estimation des stocks de carbone à l'aide de photos aériennes et d'image SPOT. *XIème journées Scientifiques du Réseau télédétection, AUF, November 3-7, Antananarivo, Madagascar*
- Grinand C, Arrouays, D, Laroche B. Martin, M.P. 2008. Extrapolating regional soil landscapes from an existing soil map : Sampling intensity, validation procedures, and integration of spatial context. *Geoderma*, 143, 180-190

15. Computer sciences skills

- GIS: QGIS, ArcGIS, Mapinfo, GRASS GIS
- Remote Sensing: ENVI, Erdas Imaging, Orpheo Toolbox
- Statistics and Programming: R stat, Excel Stat
- Database Management System: PostgreSQL, Access
- Webmapping: MapServer, Géoserver, Openlayer, Qgis Server, Lizmap

Other relevant information

Awards: Best paper in pedometrics 2008 for the article :

Grinand, C., Arrouays, D., Laroche, B. and Martin, M.P., 2008. Extrapolating regional soil landscapes from an existing soil map: Sampling intensity, validation procedures, and integration of spatial context. *Geoderma*, 143(1-2): 180–190.