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POLICY OPTIONS FOR MAINSTREAMING FOREST-BASED MITIGATION MEASURES IN EU RURAL DEVELOPMENT

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In the next programming period 2014-2020, climate change will arguably raise as a cross-cutting issue in many – if not most – policies of the EU, including programs and funding related to e.g. energy, transport, research, infrastructure, urban and rural development. Early signs of this attention can be seen in the implementation of the current period, also keeping into account the significant delay in spending, which will prompt reallocation of funds as well as the inclusion of further criteria for awarded projects.

The recent EU Green Paper on “Forest Protection and Information in the EU: Preparing forests to climate change” [COM (2010)66] and the launch of a debate on options, including the subsequent public consultation, is somehow an exploration for this increase in awareness and for the respective roles of different governance levels.

We are in a relatively early phase of development, so this paper raises more questions than provides answers for mainstreaming mitigation (and adaptation) measures in a rural development in which forests and OWL (Other wooded land) play a potentially important role, highlighting opportunities and constraints concerning the forest sector in the context of socio-economic development of rural areas.

Indeed, the theme is elusive as for its relevance at EU level: on the one hand, some think that forests could be fast and cheap means for sizeable mitigation and adaptation to climate change, but, on the other hand, the sector, and this environmental function / ecosystem service, is currently under-funded and marginal in public discourse, while the political, social and environmental sustainability of this function might exhibit the need for caution and qualifications.

The paper explores, among other issues, the options for mainstreaming mitigation policies through additionality or restructuring rural policies, by proposing a sector-specific or a standardised carbon price, to be paid for stocks or for land-use change and quality, in European or tropical forests, through price and non-price policies.

Key words: forest; mitigation; adaptation; rural development; EU policies.

Parole chiave: foreste; mitigazione; adattamento; sviluppo rurale; politiche europee.

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1. INTRODUCTION: THE CONTEXT

Climate change has been recognised as “one of the greatest challenges of our time” (Copenhagen Accord, 2009; UNFCCC Convention, 1992). Its deep, wide and only partially understood consequences will shape the “operative space” in this century and afterwards (ROCKSTRÖM *et al.*, 2009) in strong connection with the need of sustainable development (as underlined in the Cancún Agreements - 2010) across

all actions of mitigation, adaptation, technology, finance and capacity-building.

While a number of policies begin to be available and proven to boost mitigation technologies in the energy sector (IPCC, 2011), much wider global, regional, national and sub-national approaches, plans and strategies will be needed to cope with the overall transformation of the economy.

A larger number of stakeholders will need to be involved than it was envisaged explicitly

by the Kyoto Protocol: “[The Conference of the Parties]... recognizes the need to engage a broad range of stakeholders at global, regional, national and local levels, be they government, including subnational and local government, private business or civil society, including youth and persons with disability, and that gender equality and the effective participation of women and indigenous peoples are important for effective action on all aspects of climate change” (art. 7, Cancún Agreements).

Both the private and the public sector will need to be engaged, in devising, implementing and funding mitigation and adaptation (Report of the UN Secretary-General’s High-level Advisory Group on Climate Change Financing, 2009; Cancún Agreements).

In this scenario, the European Union is aiming to exert the leadership requested to developed countries by UNFCCC and its own strategic positioning in the world (Europe 2020 Strategy for smart, sustainable and inclusive growth). Moreover, the EU Commission proposal for a roadmaps with 2050 targets in emissions by broad sectors calls for a radical restructuring of sectors, technology diffusion rates, R&D efforts, social and individual behaviours (EU Commission, 2011). Although it envisages sharper cuts later in time¹, it is widely acknowledged the importance of cumulative emissions of GHG in the atmosphere (IPCC 2007; UNFCCC negotiating text²), pressing for immediate actions on 1) “low-hanging fruits”; 2) on issues that need to be solved before large scale adoption as well as 3) the mainstreaming of mitigation actions.

In short, climate change will arguably raise as a cross-cutting issue in many – if not most – poli-

cies of the EU, including programs and funding related to e.g. energy, transport, research, infrastructure, urban and rural development. This is likely to be stronger in the next programming period 2014-2020, as the targets commonly known as “20-20-20” will need to be achieved and possibly outperformed (with EU Commission suggesting in March 2011 a 25% cuts in emissions in its 2050 roadmap and with the European Parliament Environment Committee adopting in May 2011 a report calling for the EU to step up its greenhouse gas reduction target to 30% in 2020).

Indeed we expect the EU Commission to push for bolder objectives, some Member States posing objections and EU funds to be redirected in order to overcome the MS perplexities. Early signs of this attention can be seen in the implementation of the current period, also keeping into account the significant delay in spending (e.g. see for Italy the intermediate review of the Rural Development Regulation³), which will prompt reallocation of funds as well as the inclusion of further criteria for awarded projects.

Moreover, the financial crisis contains the opportunity for a macro-economic steering of emissions, to be cut during recession and to be avoided through a “green” recovery. This is not automatic because “government policies play a crucial role in accelerating the deployment of RE technologies” (IPCC, 2011, p. 31), which would also apply to other mitigation policies⁴. In this perspective, it’s urgent that Italy discusses and adopts a National plan for mitigation and adaptation to climate change.

¹ “Such a pathway would result in annual reductions compared to 1990 of roughly 1% in the first decade until 2020, 1.5% in the second decade from 2020 until 2030, and 2% in the last two decades until 2050” (EU COMMISSION, 2011, p. 5).

² “Recognizing that a delay in prompt and sufficient global emission reductions will lead to significant additional cost for both mitigation and adaptation, constrain opportunities to achieve lower stabilization levels and increase the risk of large-scale, abrupt and irreversible impacts and breaches of critical climate thresholds” (FCCC/AWGLCA/2010/14, August 2010, chapter 1). Text deleted in the final version.

³ <http://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/5090>. The Green Paper states that “the Rural Development Regulation (2007-2013) is the main instrument for financing of forest measures and includes provisions for co-financing for afforestation, payments for Natura 2000 areas, prevention and restoration and other forest environmental measures as well as a wide range of investments in forest management and wood processing” (p. 17).

⁴ For a comprehensive set of public and private policies at international, national, and subnational level to restructure sectors, change consumer habits and modify government policymaking see PIANA *et al.* (2009).

2. BACKGROUND

Green areas, including forests and other wooded land (OWL)⁵, are considered as a relatively fast and cheap means of reducing GHG concentration in the atmosphere, both by reducing deforestation and through active bio-sequestration, afforestation, reforestation (STERN, 2007; MCKINSEY, 2009; IFOAM, 2009), while providing a large arrays of co-benefits in urban and rural areas (ENRD, 2010). In particular, green areas play a double role in mitigation and adaptation (e.g. by reducing the hydro-geological risks in mountains and flood-prone areas), but remain fragile to expected impact of climate change (e.g. rising temperature and droughts leading to more damaging fire).

The recent EU Green Paper on “Forest Protection and Information in the EU: Preparing Forests to Climate Change” [COM(2010)66] and the launch of a debate on options, including the subsequent public consultation, is somehow an exploration for this increase in awareness of climate change in general as cross-cutting issue and its relevance to EU forests.

The Green Paper states that “forests are among the most bio-diverse terrestrial ecosystems. In healthy, biologically diverse forests this complexity allows organisms and their populations to adapt to changing environmental conditions and to retain overall stability of the ecosystem. Forests grow slowly: trees take years to regenerate, decades to grow and the final use of young stands is sometimes difficult to predict when they are established. Forests serve multiple and interrelated social, econom-

ic and environmental functions, often at the same time and place” (p. 5). “Forests provide jobs, income and raw materials for industry and for renewable energy... Forests protect settlements and infrastructure... Many mountain areas in Europe would be uninhabitable without forests that prevent landslides, mudflows, rock fall and avalanches from affecting roads, railways, cultivated areas and entire settlements. Such protective forests have to be especially managed to provide a stable and continuous vegetation cover. Forest areas play a role in preserving landscapes and soil fertility. Forests prevent soil erosion and desertification especially in mountains or semi arid areas, mostly by limiting runoff and lowering wind speed. They also deepen and enrich the soils upon which they grow due to their coarse and fine roots, which increase the weathering of rocks and whose degradation is a major source of soil organic matter (SOM), and so contribute to soil fertility, productivity and carbon sequestration. Efforts in afforestation and reforestation, leading to an increasing forest area in the EU, as well as natural regeneration, growing shares of mixed forests and soil friendly harvesting machinery support this function... Forests regulate freshwater supplies... Forests conserve biodiversity... Forests not only store but also evaporate huge amounts of water, complementing the flux of oceanic moisture moving inland. Forests therefore play a major role in the atmospheric circulation and the water cycle on land and may have a role in mitigating regional climate, desertification and water security problems.” (p. 5-10). “Forest protection in the EU should aim at ensuring that forests continue to perform all their productive, socio-economic and environmental functions in the future” (p. 2).

However, “due to steadily growing demand, the ratio of fellings over net annual increment could temporarily increase in some European countries to over 100 %, causing a decline in growing stock after 2020. While a temporary high utilisation rate is not necessarily unsustainable, given that the forest age-class structure is positively skewed in many M[ember] S[tates], it could turn forests from a carbon

⁵ FAO and UNECE definitions, as mentioned by EU Green Paper (p. 5): “Forest”: Land with tree crown cover (or equivalent stocking level) of more than 10 percent and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ. “Other wooded land” (OWL): Land either with a tree crown cover (or equivalent stocking level) of 5-10 percent of trees able to reach a height of 5 m at maturity in situ; or a crown cover (or equivalent stocking level) of more than 10 percent of trees not able to reach a height of 5 m at maturity in situ and shrub or bush cover.

sink into a temporary source” (p. 6). Exactly in the wrong moment: we shall need to have emissions cut and one of our best “allies” would be working in the opposite direction. This volatility, including the negative effects of climate change and other stressors on forests⁶, calls for an enhanced monitoring system (including a better comparability and high-spatial resolution of statistics), which in turn will be a major issue for connecting payments for ecosystem-services, including for carbon sequestration.

These issues stand out from a background where “competence for forest policy lies primarily with the Member States, (MS) under the subsidiarity principle. The role of the EU is limited and designed principally to add value to national forest policies and programs” (p. 2). Consequently, a good architecture should link different governance levels, probably with Structural Funds being one of the key instruments used by EU to maintain coherence, especially if mainstreaming of pilot projects launched with the Structural Funds could be envisaged for the mid-term.

In response to the Green Paper, a wide public consultation has been carried out, with (national and local) government and public bodies (including Parliaments), business and industry, individuals and forest owners, NGOs, researchers and academics taking active part. As the Commission Services made a synthesis of its results, they stated: “Many respondents across all groups mentioned the carbon sequestration capacity of the forests as a potentially important contribution to mitigation of climate change by removing CO₂ from the atmosphere and

locking it up in harvested wood products and standing forest.” (EU COMMISSION SERVICES, 2010, p. 34).

“A sizeable majority of reactions argue for more harmonised and more readily available information about EU forests, with links being made to a variety of policies and issues, such as forest production estimates, biodiversity in forests, carbon accounting valuation of non timber forest services and goods, etc.” (p. 4).

“There is a general consensus that forests in the Mediterranean region are likely to be most affected by climate change, with mountain forests and Central European (mostly coniferous) mentioned next. The evolution to dryer growing conditions is the most mentioned effect of climate change” (p. 4).

As for the policies related to forestry, across governments and public bodies, “most of the respondents believe that existing policies are not sufficient to ensure forest protection, both in general or in some policy areas, i.e. civil protection, forest fires, biodiversity, nature, biomass, non marketable services, forest health or other areas. Others believe that the current policies are adequate, but with room for improvement. They mention linking policy developers with managers, including non marketable services, solving implementation problems etc.” (p. 19).

Confirming our expectation on climate change raising in relevance, the report states that “given the high importance that most stakeholder groups attach to continued research on forests and climate change, the FP8 Research Agenda would have to be accommodated accordingly” (idem, p. 37).

3. POLICY OPTIONS: A DISCUSSION

The goal of using forestry as a mitigation and adaptation major field of action is elusive as for its relevance at EU level: on the one hand, some think that forests could be fast and cheap means for sizeable mitigation and adaptation to climate change, but, on the other hand, the sector, and this environmental function / ecosystem service, is currently under-funded and marginal in public discourse, while the political, social and environmental sustainability of

⁶ “Mean temperatures in Europe have now risen by almost 1°C during the past century and are expected to climb further, the most optimistic scenario forecasting an increase of 2°C by 2100. A change of this magnitude corresponds to the difference in the temperature optimum of forest types as different as spruce versus beech forest or beech versus oak stands. It will thus alter the suitability of whole regions for certain forest types, forcing a shift in natural species distribution and leading to changes in growth of existing stands. In addition extreme events (storms, forest fires, droughts and heatwaves) are expected to become much more common and/or severe. Even without climate change, the capacity of forests to carry out their functions has always been under pressure from various natural hazards” (idem, p. 11).

this function⁷ might exhibit the need for caution and qualifications⁸.

Since we are in a relatively early phase of development, this paper raises more questions than provides answers for mainstreaming mitigation (and adaptation) measures in a rural development in which forests and OWL (Other wooded land) play a potentially important role, highlighting opportunities and constraints concerning the forest sector in the context of socio-economic development of rural areas. The questions covers separated issues, without any claim of exhaustiveness.

3.1. *How to mainstream mitigation policies: additionality or restructuring?*

Mitigation policies, such as payments for carbon sequestration, can be additional to existing tools or be integrated in a restructured policy for rural areas. The first option is easier and faster: to fix a price for carbon, to explicit a list of eligibility conditions, and provide direct payments to the decision-maker responsible for such a sequestration. The measurement, reporting and verification (MRV) should be robust and as coarse as the payment structure, keeping into account the cost of MRV – maybe offered as positive externalities by the national state or by EU.

In this way, a number of lessons from the

feed-in tariffs for renewable energies would be included, such as simplicity, a wide range of “entrants” (both incumbents and new entrants), market-driven localisation, with public powers in charge for possible further conditions (e.g. landscape and biodiversity protection).

Until the CAP remains the main funding EU tools for forests, the much larger role of agriculture in it and its perspective general reduction⁹ might induce a “war” for resources. Additionality from other sources would temporarily avoid this¹⁰, at the price of possible incoherence with the price and non-price signals provided by CAP and other policies. In particular the promotion of woody biomass renewable supply for energy, on the one hand, and biodiversity protection and enhancement, on the other hand, might give different pressures (and the climate policy resulting from additionality might favour monocultures of plants with high rates of growth, irrespective of native species and the presence of biodiversity).

An integrated approach to rural areas, having a fair emphasis on forests and OWL as multi-functional complex objects, as well as to urban and sub-urban areas, having a fair emphasis on green areas, would entail a longer but probably more robust and safer mainstreaming.

3.2. *Sector-specific or standardised carbon price?*

The service of bio-sequestration can be paid an amount per tonne of CO₂ that reflects the market negotiations in the Emissions Trading Scheme (ETS), thus the conditions in the sectors of energy and aviation. This would assure overall coherence, with mitigation taking place where it costs the least. The Commission has launched studies and a public consultation on the inclusion of LULUCF (Land Use, Land-

⁷ For a methodology and a preliminary application to mitigation policies of political feasibility assessment see PIANA (2011).

⁸ See for instance the strong statements by FERN: “[T]he CAP’s contribution to reversing biodiversity decline has been counterproductive. Afforestation measures under the current Rural Development Regulation (RDR) are among the most important measures affecting forestry. More than one third of the EAFRD budget for forest-specific measures has been allocated to afforestation. The current Rural Development Policy stipulates that protection of the environment is an important criterion for afforestation and that care should be taken to avoid afforestation which is harmful to biodiversity or causes environmental damage. Practice shows however that the current policy lacks clear guidelines for afforestation. As indicated in a FERN report that looked at the National RDPs of six countries, a large proportion of funding allocated to afforestation goes to plantations of non-native or ‘alien’ and sometimes invasive species. There are clear indications that alien species have a negative environmental impact and harm biodiversity. Therefore CAP funding has been negatively impacting biodiversity, rather than contributing to halting its decline” (FERN, 2010).

⁹ See the Italian Cooperatives response to the public consultation (“Il contributo delle cooperative forestali italiane al dibattito sulle foreste ed i cambiamenti climatici”, Legacoop, July 2010, p. 1).

¹⁰ See the Tuscany Region response to the public consultation (Risposta al Libro verde della Commissione europea “La protezione e l’informazione sulle foreste nell’UE: Preparare foreste ai cambiamenti climatici”, Direzione generale competitività del sistema regionale e sviluppo delle competenze, p. 3).

Use Change and Forestry) into ETS, with October 2011 the expected date of adoption¹¹.

We do not have here the scope to cover all the aspects raised across this issue. However, the ETS price, more or less appropriate to induce change in those sectors, might fail to be attractive for the conditions of the forest sector, due to the temporal profile for revenues (and carbon sequestration), to its ownership fragmentation and dimension, to the separation between owners of holdings and firms performing forest services, etc. The inclusion of LULUCF into ETS might reduce the equilibrium price of carbon, to the effect of hampering and delaying action in other sectors.

The example of feed-in tariffs for renewables has demonstrated that a much higher level of implicit carbon price is necessary to move investors, while it also underlines the need to keep into account the organisational and technical features that characterise a sector (for instance it was essential to mandate connections to the grid and avoid that transportation network facilities might reject the supply of renewables).

As the system to induce a much larger afforestation and reforestation, including strategies to cope with all the overlapping issues, is largely still to be built, a span of time might be given for sector-specific tools and prices, with the integration with other markets an open possibility. For instance a different price might be established for rural areas, on the one hand, and green areas in urban settlements, on the other hand, where large quantities are unlikely but where action would quickly impact population awareness, consensus and engagement, as they have a vast array of co-benefits (e.g. in terms of atmospheric quality, noise reduction, urban regeneration, etc.).

In particular, it might be important to identify ways to raise money that remain relatively separated from the national and EU budget, so as to increase the credibility of commitments in front of investors.

3.3. *Pay for stocks or for land-use change and quality?*

Carbon sequestered in existing forests (not to mention in the so-called “blue carbon” of mangroves, etc.) is so huge that if we were to pay for it, the sums would immediately skyrocket (or the price for unit of carbon would be very low). Moreover, the positive or negative judgement for the use of a certain “area” depends strictly on: 1. the state it was before (it’s ok to have a plantation in a degraded land, it’s not ok if we destroyed a biodiversity hotspot); 2. the quality in which it is managed (for instance a plantation might involve large quantities of chemicals or be respectful of natural biodiversity).

In this vein, it’s crucial to have good satellite and on-site measurement and evaluation of historical phases of land use, time-series and baselines, so as to attribute values to changes (both gradual and switches). In particular, the identification of degraded land, dismissed holdings, areas at hydro-geological risk and other change-prone land should be conducted both at local and higher level, so as to quickly implement strategies of renaturalisation, reforestation and afforestation as well as other interventions that improve the carbon content in soil and above soil, while appropriately combining with other environmental, social and economic functions, including adaptation and resilience to climate change impact.

3.4. *European or tropical forests as “loci” for mitigation?*

The potential of both European and tropical forests to capture CO₂ and delivering a host of co-benefits is clearly recognised. The obvious position is that we need both for a global contribution to solving climate change. However, sometimes their additionality is overlooked. In particular: in certain environments of developed countries, mitigation through a reduction in deforestation in developing countries is considered a cheap way to shift the burden from the energy sector and away from the countries which cumulated the climate debt. In part because of this analysis, the Cancún Agreements quote 51 times the word “forest” and its compounds

¹¹ See COM(2012)93 Final for a further step in the process.

while neglecting to quote the word “energy” even one time.

Conversely, projects aimed at raising funds for local forests in Europe could easier get political support from communities, possibly in the relation to the search for local solutions to global problems.

If funds were to be directed to forests from the national budget, the problem of choosing between the two might soon become an issue. In this respect, it’s important to mobilise funds with a certain degree of independence, by raising awareness in the right constituencies.

3.5. Price or non-price signals and policies?

Until now, we assumed that funds and prices, including payments for ecosystem services and carbon sequestration¹², are effective and sufficient in changing habits, organisational routines, sector structures, local governance and national policies. However, before and beyond price signals, consumers, firms and policymakers are sensitive to issues like power, reputation, technology, mental frames. For instance advertising could be a stronger motivating factor than prices to boost sustainable consumption, given the importance it plays also in general decision-making (PIANA, 2005). Technology, far from being exogenous, is the result of strategies of sectoral, national and sub-national innovation systems, including a vast array of agents, such as firms, universities, research centres, incubators, etc.

As non-price-only mitigation policies have been widely discussed in PIANA (2009), we just mention that for forestry, significant policies could be PRODINT (pro-diffusion-of-innovation tax), FREEADV (free advertising for green products, e.g. carrying a sector-specific eco-label), THEMDAY (thematic days to break habits and launch initiatives), especially if bundled in strategies¹³, with a carefully

planned sequence, stakeholders’ involvement and consensus building. Indeed, it’s crucial that all policies, both price-based and non-price based collect a wide consensus, as explored in PIANA (2011).

4. CONCLUSIONS AND FURTHER STEPS

Climate change is a major – but not the only – trend impacting forests and other wooded land. It’s important to give this sector, in all its territorial, identity-shaping and economic dimensions a much stronger consideration than in the past. Policies should coherently support positive changes in land use and its quality. It will be important to outline a multi-level governance that suggests, chooses and implement sector-specific policies for climate change mitigation and adaptation in the context of sustainable rural and urban development.

RIASSUNTO

Opzioni di policy per il mainstreaming delle misure forestali di mitigazione nello sviluppo rurale dell’Unione Europea

Nel prossimo periodo di programmazione 2014-2020 il cambiamento climatico diventerà probabilmente una tematica trasversale di molte (se non tutte) politiche dell’UE, inclusi i programmi e i fondi connessi ad esempio all’energia, ai trasporti, alla ricerca, alle infrastrutture e allo sviluppo rurale ed urbano. Primi segnali di questa attenzione possono essere osservati nell’implementazione dell’attuale periodo, anche se si deve tenere in considerazione il forte ritardo di spesa che comporterà sia una riallocazione dei fondi che l’inclusione di ulteriori criteri per i progetti approvati.

Il recente “Libro verde” dell’UE “La protezione e l’informazione sulle foreste nell’UE: preparare le foreste ai cambiamenti climatici” [COM (2010)66] ed il lancio di un dibattito sulle possibili opzioni, compresa la relativa consultazione pubblica, rappresenta in qualche modo una sorta di esplorazione per questa accresciuta consapevolezza e per i ruoli dei diversi livelli di governo.

Ci troviamo in una fase relativamente precoce di questo processo e per questa ragione il presente contributo solleva domande più che fornire risposte su quelle che sono le principali misure di mitigazione (e adattamento) previste in uno sviluppo rurale in cui le foreste e le altre aree boscate (OWL) (*Other Wooded Land*) svolgono un ruolo potenzialmente importante. Il contributo dunque evidenzia opportunità e limiti relativi al settore forestale nel contesto dello sviluppo socioeconomico delle aree rurali.

¹² See DG AGRI (2008) for an exploration of a possible system of payments.

¹³ For a simplified explanation of these strategies, see the Catalogue of Innovative Economic Strategies for Climate Change Mitigation at http://www.economicwebinstitute.org/essays/innopolity_catalogue.pdf.

Il tema è ancora incerto rispetto alla sua rilevanza a livello di UE. Da un lato alcuni ritengono che le foreste possano rappresentare degli strumenti economici e rapidi per implementare rilevanti azioni di mitigazione e adattamento al cambiamento climatico. Dall'altro lato, però, il settore forestale e questa sua importante funzione ambientale ed ecosistemica sono attualmente sotto-finanziati e ricoprono ancora un ruolo marginale nei discorsi pubblici. La sostenibilità politica, sociale ed ambientale di questa funzione, al contrario, potrebbe mostrare la necessità di prudenza e qualificazione. Il contributo esplora, tra altri temi, le opzioni alternative per le principali politiche di mitigazione quali l'addizionalità alle – oppure la ristrutturazione delle – politiche rurali, proponendo per il settore un prezzo del carbonio, che sia specifico oppure standardizzato, da essere corrisposto attraverso politiche relative al prezzo per gli stock (o gli incrementi) di CO₂ (o al cambiamento dell'uso del suolo o la rispettiva qualità di gestione ambientale) nelle foreste europee piuttosto che tropicali, nonché esplorando politiche non di prezzo.

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